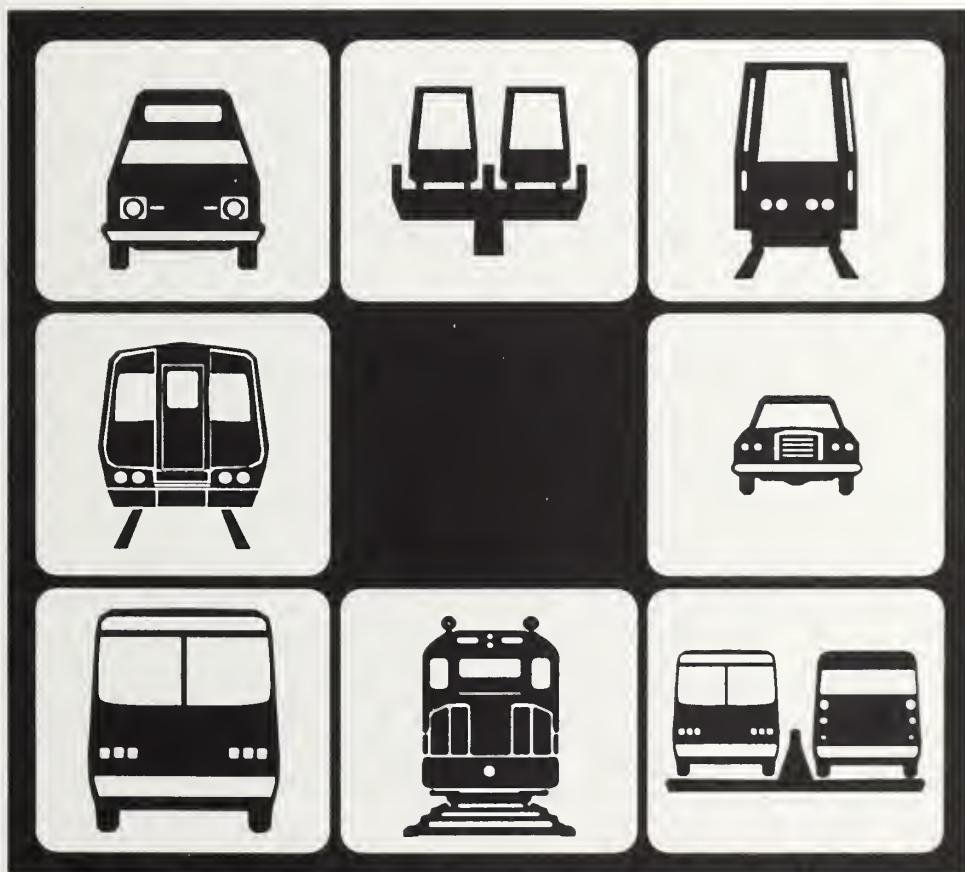


Liability Cost and Risk Analysis Studies

Bus Liability Review for Six Transit Systems

January 1996



Office of Planning



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**Final Report
January 1996**

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PREFACE

This study examines contemporary risk management and risk financing practices which are in effect at six bus transit systems. The study is sponsored by the U.S. Department of Transportation, Federal Transit Administration, the Office of Planning, and performed by Abacus Technology Corporation under contract DTFT60-94-C-41010.

The data contained in this report were provided by various personnel from each of the six transit bus agencies. We wish to thank them for their cooperation and participation in this study. Abacus wishes to acknowledge the significant contribution made to the study by Dr. Ross W. Adams of the Federal Transit Administration. His 1992 issue paper gave full treatment to cost of risk and tort liability for transit agencies. Many thanks also go to Ms. Mattie Condray of the American Public Transit Association for her guidance in the study's consideration of legal issues. We especially wish to thank the Federal Transit Administration's Office of Planning: Mr. Edward Thomas, Ms. Nancy Strine and Ms. Effie Stallsinith, for their attention and guidance throughout the study, as well as their comments on the draft reports.

EXECUTIVE SUMMARY

This study is sponsored by the Federal Transit Authority (FTA), Office of Planning. The study examines auto/bus vehicular liability expense and risk financing practices for a sample of six representative United States transit systems which operate bus fleets. To enable more meaningful interpretation of the study results, the six participants are aggregated into two study groups:

- Study Group A is the three larger transit systems
- Study Group B is the three smaller transit systems.

Exhibit ES-1 is an overview of the study participants, showing the summary characteristics of each transit system and study group in the sample.

EXHIBIT ES-1 Overview of Study Participants

Group A <i>(larger systems)</i>	Geographic Location	Fleet Size	Passengers (millions)	Operating Expense (millions)	Casualty & Liability \$ (millions)	Insurance Type
. A1	Mideast	1,300	236	\$290	\$8.6	Self-insured
. A2	Northwest	600	51	\$108	\$2.0	Self-insured
. A3	West	500	24	\$46	\$0.9	Self-insured
Subtotal Group A		2,400	311	\$444	\$11.5	
Average Group A		800	104	\$148	\$3.8	
<hr/>						
Group B <i>(smaller systems)</i>						
. B1	Westcoast	200	16	\$37	\$1.5	Self-insured
. B2	South	200	10	\$24	\$1.1	Self-insured
. B3	Southeast	30	1	\$2	\$0.2	Commercial
Subtotal Group B		430	27	\$63	\$2.8	
Average Group B		143	9	\$21	\$0.9	

Overview of the Study

The primary impetus for the study is previous Congressional interest in transit tort liability. Casualty & liability expense was a major issue for public transit in the mid-to-late 1980s, due to the well-documented insurance crisis of that period which was characterized by high premium rates, and limited and restricted amounts of coverage. In February 1992, the FTA produced an issue/assessment paper¹ in response to an inquiry which was raised during Department of Transportation hearings before a subcommittee of the U.S. House of Representatives Appropriations Committee (102nd United States Congress). In this paper, the FTA used linear regression techniques to project that by 1995, casualty & liability expense for (all) public transit would approach \$680 million. The FTA speculated that tort reform could slow the growth of casualty & liability expense, and reviewed the nature of the cost elements which were at the time included in Federal Section 15 reporting of casualty & liability expense.

The paper also examined risk financing, and showed that in 1992 many large transit systems were self-insured in response to the diminished capacity (insurance crisis) of the previous decade. It also discussed the ebb and flow of the insurance cycle in economic terms: a "hard" market is characterized by low supply of coverage, high demand and high premium rates; a "soft" market is higher coverage capacity and lower demand, and therefore lower premium rates. This cycle is mainly driven by the overall (U.S. and world) economy since insurance is integrally linked to the investment industry, but the cycle can also be affected by local insurance practices and standards, political events and initiatives for legal reform, and by circumstances and occurrences (such as a significant and highly publicized loss) within the transit industry itself.

The objective of this study is to follow-up on the major issues which were raised in 1992. The study findings cover three main topical areas:

- *Casualty & liability expense* for large and small transit systems, including an examination of cost dependencies for the sample, and a look at global cost levels as a follow-up to FTA projections
- *Claims procedure and loss experience* for the sample, including an examination of the impact of current jurisdictional statutory limits to tort (civil, usually state) liability; accounting standards; risk management information systems; and safety
- *Risk financing*, a review of current practices and cost experience with purchasing public transit liability insurance.

¹ Adams, Ross W., Issue/Assessment Paper Number 20: Tort Liability and Reform for Transit Operating Agencies, February 29, 1992.

The technical approach for the study includes an extensive contemporary literature search, site surveys, and site visits. Literature search results are included in Chapter 2. A survey was developed to obtain liability, operating, and organizational information from the study groups. The survey was mailed to each of the study participants, who completed it prior to the scheduled site visits which were conducted at each property during July and August 1995. The three-day site visits took the form of on-site observation, facility tours, and extensive field interviews with transit professionals in the areas of risk management, safety, law, finance, and operations and maintenance.

Key Findings

Various techniques are used in the study to obtain the data findings. Analysis of cross-sample and within-group trends uses regression analysis in order to highlight possible dependencies, and employs simple comparative methods to show percent and average amounts. Interview material and notes collected during the site visits are used to validate the quantitative findings and enhance this material wherever possible.

Regression analysis is especially useful in examining the casualty & liability cost information across the sample, since a primary objective in this area is to point up "cost drivers" for casualty & liability expense. Very little industry data is available which describes the content of this account or the method which is used to report expenses to it. Improvements are presently underway, since public transit systems are working to standardize their financial reporting in this area as a result of two recent governmental (public entity) accounting requirements, Accounting and Financial Reporting for Risk Financing and Related Insurance Issues (GASB 10)² and Measurement Focus and Basis of Accounting (GASB 11)³.

Major findings are presented in detail in Chapter 3 and are summarized here:

- (1) Casualty & liability expense per million passenger miles is significantly lower for the larger transit systems in the study, as compared to the smaller systems. For the study period 1991-1993, the larger systems averaged a 72 percent cost savings when compared to the smaller systems for the same period; for 1994, a 38 percent cost savings was observed for the larger systems relative to the smaller systems. This finding would appear to indicate a higher level of cost efficiency for liability expense, for the larger systems in the sample.

² Governmental Accounting Standards Board Statement No. 10, Accounting and Financial Reporting for Risk Financing and Related Insurance Issues. Establishes accounting and financial reporting standards for risk financing and insurance-related activities of state and local governmental entities. Published in November 1989, transit properties have until 1994-95 to implement the standard.

³ Governmental Accounting Standards Board Statement No. 11, Measurement Focus and Basis of Accounting. Published in May 1990, it must be implemented by the year 2000.

- (2) For the period 1989-1993, total casualty and liability expense has decreased by 24 percent for the largest U.S. public transit systems reporting Section 15 information, and has increased by 50 percent for mid-sized systems.
- (3) Losses are found to be high relative to premiums where there are statutory maximums or legislated caps for tort liability. In a cross-sample analysis, the presence of statutory limits are found to reduce the number of large claims (claims greater than \$25,000) for the study sample, but statutory limits do not show an effect of reducing total tort liability payments relative to rider fees.
- (4) For both study groups, regression analysis indicates that passenger miles is an excellent predictor of casualty & liability expense levels. Other strong within-group indicators are:
 - Study Group A (larger systems) -- "Number of Large Claims," $r(2) = .96$
 - Study Group B (smaller systems) -- "Claims Paid," $r(2) = .74$.
- (5) Claims paid per million passenger miles is higher by a factor of six for the smaller transit systems in the sample, and total claims and lawsuits outstanding per million passengers is higher by a factor of two for the smaller systems.
- (6) GASB 10 is phasing-in, with a goal of eliminating the practice of overstating the financial condition of public entities by treating liabilities on a "pay as you go" basis. GASB 10 calls for loss trending and loss development, policy-year reporting (actuarial method), and optional discounting of funds held in reserve. GASB 11 will require accruals for estimated losses, and will further press public transit systems to adopt standard methods of accounting for and reporting losses. The six transit systems in the study are currently working to meet compliance objectives for GASB 10.
- (7) The study shows an uneven schedule for actuarial review across the study sample. Some systems, though self-insured, had never had an actuarial study performed. The smaller study group generally relies on in-house guidance to fund liability reserves, while the larger systems tended to rely more on actuarial studies (though in one case the actuarial study was outdated).
- (8) The study shows a national trend across the sample to assign the Safety function to the Risk Management group. Formerly, Safety was generally assigned to the Transportation department. Risk managers express satisfaction with this development, but safety managers mainly rely on transportation data and therefore express some degree of tentativeness in having to use existing risk management information systems (RMIS).
- (9) RMIS observed in the study are generally homegrown hybrids of older mainframe systems and newer PC applications (databases and spreadsheets). RMIS are mainly

used by the claims adjusters to track claims, but there was not one transit system in the study which connected RMIS to the transportation database or to the financial general ledger. The transportation database logs all daily incident activity, including specifics regarding operator, vehicle, weather, traffic, passengers and injuries. The general ledger produces monthly financial statements, and currently requires manual entry for RMIS claims reserve analysis.

(10) Risk financing is found to be in a very stable mode across the sample. There is a trend to continued self-insurance, particularly on the part of the larger systems. Only one large system in the study is currently investigating an option to purchase commercial liability coverage in lieu of self-insurance. Policy premiums appear stable, and risk managers report no problems with purchasing or renewing liability coverage.

Summary Recommendations

This study offers a special opportunity to "carve a window" on contemporary transit practice in the specific area of auto/bus vehicular liability exposure and risk financing. The recommendations presented here are based on careful observation of current practice within the transit agencies, and on the specific recommendations of the transit practitioners who actively participated in the data collection phase of the study.

The study recommends the following six **changes in practice** where feasible;

(1) For Federal reporting of Casualty & Liability expense, include cost summaries for the following four cost classes:

- Insurance premiums
- Losses (include paid losses, loss reserves, IBNR⁴, and loss subrogations)
- Attorney fees
- Other allocated expense (specify).

(2) Connect (network) the RMIS with the transportation data log and the financial general ledger, if possible. Compute the monthly liability closing entry from RMIS, using this algorithm:

$$\text{Beginning of period liability} + \text{Current period claims and changes in estimates} - \text{Claims payments} = \text{Current Position}$$

Use RMIS to produce monthly loss triangles, in order to comply with GASB 10. Loss triangles should capture paid losses, loss reserves, and losses incurred (paid + reserves). RMIS should have the capacity to sort and report by mode (bus, rail, etc.), and by claims or lawsuits.

⁴ IBNR is an actuarial term meaning "incurred but not reported" losses. It is usually a factor which is applied to current loss reserves, to adjust for historical cost growth trends.

- (3) Set internal (agency) target goals for liability, such as the expected cost of a claims-month and the expected number of new claims per calendar month. Setting goals produces realistic standards over time and motivates agency staff to take responsibility for improvements.
- (4) For losses which carry reserves of at least \$25,000, provide special dispositional treatment including General Manager and Board of Directors briefings and settlement sign-off.
- (5) Investigate "virtual" training programs for bus operators. These programs use multimedia computers to simulate traffic and weather conditions, and mechanical malfunctions.
- (6) Conduct an actuarial study not less than once every three years. Smaller systems tend to be more vulnerable to large and unexpected exposures, so an annual actuarial review is recommended for this group.

As a result of the findings and recommendations which are noted above and described in detail in Chapter 3.0, further study is recommended in the following areas:

- (1) Study is needed to examine the cost impact of transit compliance with GASB 10 and the status of agency efforts to convert their liability reporting from a cash-flow to an actuarial basis.
- (2) Once transit is in compliance with GASB 10, an analysis of the cost of risk can be conducted, since for the first time transit reporting will be uniform.
- (3) For self-insured transit systems, study is needed to assess the degree of compliance with actuarial recommendations for claims reserves. Excess liability commercial coverage also needs a thorough review for cost and adequacy, since the study finds that this coverage is not monitored as closely as liability reserves and deductible retentions for self-insured transit systems.

1.0 INTRODUCTION

The Federal Transit Administration (FTA) is sponsoring this study to examine casualty/liability expense reporting for selected, representative transit systems in the United States which operate bus fleets. The study builds on earlier research which analyzed the cost of risk for United States public transit, and which reviewed transit agency loss potential as a result of tort claims and national and state tort reform. This study examines contemporary loss and claims experience. The remainder of this chapter describes the (i) study objectives, (ii) study participants, and (iii) study methodology.

1.1 STUDY OBJECTIVES

The objective of this study is to document current practice and identify recent trends in the areas of: (i) auto/bus vehicular liability losses for the six bus transit systems sampled; (ii) claims processing and management for bodily injury and property damage incidents; and (iii) Casualty & Liability expense reporting via federal object class 506.

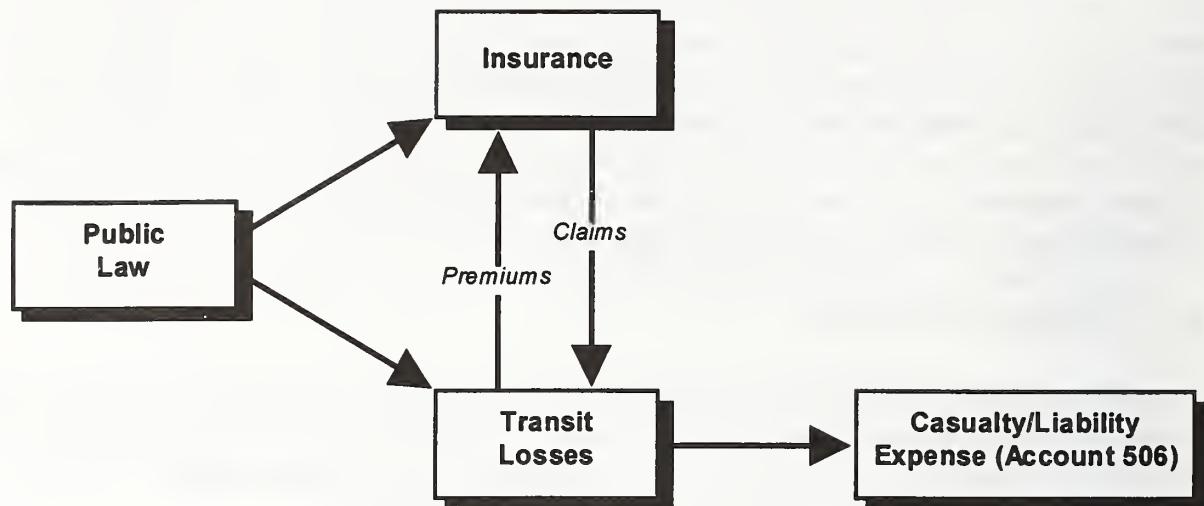
This study focuses on auto/bus liability claims activity, which is the single largest source of sustained transit losses. Exhibit 1-1 summarizes the study objectives and shows the flow of events which influence and result in public transit's reported casualty/liability expense. The depiction is generally accurate, although some transit systems are self-insured and self-contained for claims administration.

The study's findings pertain to only the six transit systems sampled. Although efforts were made to achieve a geographically representative sample, and a sample which ranges widely in fleet size, causal relationships may not be reliably deduced from the survey results. Instead, the study's primary contribution is the experience-based recommendations provided in the study by transit risk management and related personnel, which reflect contemporary practice within the public transit industry of the United States.

1.2 STUDY PARTICIPANTS

The study participants are the FTA, Abacus Technology Corporation, and six public transit systems which each operate a motorbus fleet of variable size. The six transit systems are geographically and organizationally diverse, with daily operations managed by either a state, regional, or municipal public agency, or by an independent contractor. The participants' identities and specific geographic locations shall remain undisclosed in the study, due to the confidential nature of the subject matter. Observations and commentary regarding operating characteristics, performance characteristics, and trends are reported in the aggregate, for two groups: Group A (the larger three transit systems) and Group B (the smaller three transit systems). When it is necessary to refer to a specific transit system within a Group, then numeric designators are used, e.g., A1 is the largest transit system in the study sample, A3 is the smallest system in the larger group, B2 is the mid-point in the smaller group.

EXHIBIT 1-1
Study Objectives



STUDY OBJECTIVES *:

- To review auto/bus vehicular liability losses.
- To describe the claims management process.
- To describe the nature of and process for reporting casualty/liability expense in federal object class 506, and to make recommendations for improvement.

* *With regard to the six transit systems sampled.*

Each of the transit systems in the study sample has formal risk management departments. Some transit systems are self-insured and some carry commercial liability insurance; some transit systems have self-contained claims administration and some use pools, brokers, or third-party administrators (TPAs) for this purpose; some transit systems perform or contract for regular actuarial studies; and some do not utilize these studies. Exhibit 1-2 is a summary of operating and performance characteristics for the full study sample. This information is being furnished in order to provide an informational overview of the two Groups of study participants, by presenting aggregate (grouped) data via indicators which are commonly used in the transit industry. Exhibit 1-3 shows some specific characteristics for each transit system within Groups A and B.

EXHIBIT 1-2
Aggregate Characteristics of the Study Participants
Average of Years: 1991, 1992, and 1993

		Study Group A	Study Group B	Total (Average)
(1) Vehicles in Service	<i>see Note A</i>	792	127	459
(2) Average Fleet Age (in Years)		9	9	9
(3) Directional Route Miles, Mixed ROW		1,929	869	1,399
(4) Service Area Population	000's	1,689	615	1,152
(5) Percent Federal Operating Funds	<i>see Note B</i>	7.6%	17.1%	12.4%
(6) Incident Count	<i>see Note C</i>	623	93	358
(7) Incident Ratio	<i>see Note D</i>	18	19	19
(8) Operating Expense	\$000's	\$142,914	\$19,781	\$81,348
(9) Annual Passenger Miles	000's	288,252	36,416	162,334
(10) Annual Vehicle Revenue Mil	000's	25,702	4,882	15,292
(11) Annual Unlinked Trips	000's	82,675	8,826	45,750
(12) Casualty & Liability Expense	\$000's	\$2,857	\$894	\$1,876
(13) C&L / Operating Expense		2%	5%	3%
(14) Operating Exp / Veh Rev Miles	<i>see Note E</i>	\$4.81	\$3.57	\$5.32
(15) Operating Exp / Passenger Miles	<i>see Note F</i>	\$0.46	\$0.52	\$0.50
(16) Unlinked Trips / Veh Rev Miles	<i>see Note G</i>	2.78	1.86	2.99

Notes:

- A) Vehicles in service include Motorbus, Trolleybus, Demand Response and Vanpool modes.
- B) Percent Federal operating funds is reported for the transit system, i.e., all modes.
- C) Incident count is Section 15 reported collisions; excluded are station incidents and other non-collisions.
- D) Incident ratio is the number of collisions per million revenue miles.
- E) Operating expense / vehicle revenue miles is an indicator of Service Efficiency. Lower is better.
- F) Operating expense / passenger miles is an indicator of Cost Effectiveness. Lower is better.
- G) Unlinked trips / vehicle revenue miles is an indicator of Service Effectiveness. Higher is better.

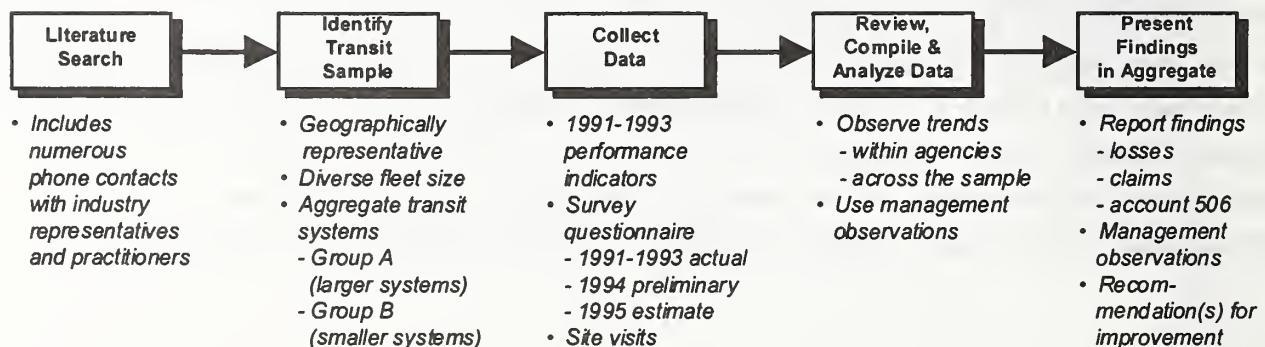
FIGURE 1-3
Specific Characteristics of the Study Participants
Average of Years: 1991, 1992, and 1993

	Geographic Location	Management of Daily Operations	Fleet Size	Bus only?
Group A <i>(larger systems)</i>				
. Transit System A-1	Mideast	Regional Org.	1,500	No
. Transit System A-2	Northwest	Regional Org.	550	No
. Transit System A-3	Midwest	Regional Org.	450	Yes
Group B <i>(smaller systems)</i>				
. Transit System B-1	Westcoast	Municipal Org.	200	No
. Transit System B-2	South	Regional Org.	150	Yes
. Transit System B-3	Southeast	Contractor	25	Yes

1.3 STUDY METHODOLOGY

The study methodology is designed to meet the study objectives, i.e., to review and examine transit system losses, claims procedures, and the content and methodology for reporting casualty/liability expenses. The study methodology is the result of extensive review and discussion with FTA, and provides a flexible means by which transit management observations and recommendations for improvement are blended into the study findings. Exhibit 1-4 shows the sequence of activities which comprise the study methodology.

EXHIBIT 1-4 **Study Methodology**



1.3.1 Literature Search

Literature resources for the study include numerous contemporary books, articles, and research documents which cover the field of modern transit liability experience, especially the topics of claims, losses, and insurance and tort reform. Business Insurance¹ and Passenger Transport² are two weekly industry publications which are used extensively in the study, to garner current facts and concepts in the broad area of transit and public liability. The search also includes numerous telephone contacts and discussions on the topic of transit liability, with transit practitioners and consultants who are active in the field of transit research. Particular credit for substantive contribution to this study goes to: Mattie Condray, Staff Advisor for APTA Legal Affairs Committee; Daniel Krier, Chairman, APTA RISK Management Committee; and the FTA Office of Technical Assistance and Safety, on the subject of transit tort liability and its impact on the cost of risk.

Prior to development of the survey questionnaire, risk managers at each participating transit system were contacted to get an overview of operations and liability experience for each respective transit system in the study sample. Frequently, these discussions led to the identification of additional articles and periodicals which further enhanced the literature search.

1.3.2 Identify Transit Sample

Geographic diversity and a broad, representative range of fleet size are two factors which were mandatory for the selection of the study sample. In discussions with FTA in the Spring of 1995, six transit systems were selected as participant candidates. Two additional bus transit systems were selected as alternate candidates.

On May 23, 1995, FTA sent letters to each of the participant candidates and alternates, informing each transit agency of the study and extending an invitation to participate. The final sample of six bus transit systems selected includes fleet sizes³ which range from 1,500 buses for the largest system to 25 buses for the smallest. Confidentiality of data is an issue of concern in this study, due to the sensitive nature of the liability information under investigation. Therefore, the sample of six bus systems was divided into two groups: Group A includes the three larger bus systems with regard to fleet size, and Group B includes the three smaller bus systems. This aggregation should lead to a better interpretation of trends, and will provide the basis for more sound conclusions and recommendations.

¹ Business Insurance is a weekly periodical for corporate risk, employee benefit, and financial executives.

² Passenger Transport is the weekly newspaper of the American Public Transit Association (APTA).

³ Fleet includes motor bus, demand response (including paratransit and purchased transportation), and vanpool modes.

1.3.3 Collect Data

The study is designed to collect the data in a way that facilitates the observation of trends, and documents management insight into the claims and settlement process within selected bus transit systems. There are three stages of data collection, as described below.

Performance Indicators. An investigation was first performed on 18 historical performance indicators, 1991-1993, for the six transit systems sampled. Appendix A is a summary table (excludes specific data due to confidentiality) of the performance indicators used. Five indicators are used to identify the degree of dispersion within each group in the study sample. For each of the five performance indicators used, the arithmetic mean and standard deviation⁴ are calculated for each group in the study sample. Exhibit 1-5 shows the results of this analysis.

EXHIBIT 1-5 Mean and Standard Deviation for Selected Performance Indicators

<u>Performance Indicators:</u>	Arithmetic		Standard	
	Mean	Group A	Group A	Group B
(1) Vehicles in Service	792	127	532	90
(2) Incident Count	623	93	786	95
(3) Operating Expense	\$000's 142,914	19,781	132	17
(4) Annual Vehicle Revenue Miles	000's 25,702	4,882	12	3
(5) Casualty & Liability Expense	\$000's 2,857	894	3	1

This data is interpreted to show that, for all five indicators, Group B is significantly less dispersed than Group A. This is demonstrated by the uniformly lower standard deviations observed for Group B, as compared to Group A, for each performance indicator used in the analysis. The main implication of this preliminary analysis is that the observations and findings which are recorded in the main body of this study are "tighter" for Group B, the group of smaller bus systems, than they are for Group A, the larger systems. Group A standard deviations are "loose" relative to those observed for Group B. Since the study is not designed for or intended to constitute scientific analysis, this disparity in observed standard deviations is not a critical flaw. Rather, caution is necessary to avoid an erroneous tendency to perceive causality, or to extrapolate the study findings to other segments of the transit industry. However, it is believed that the trends and observations which are documented in the study are useful and interesting, in the particular context of the bisected study sample.

⁴ Standard deviation is a statistical index which is a standard measure of dispersion or variability for a sample group.

Survey Questionnaire. A survey questionnaire was developed to obtain risk management, operating, and financial information from the bus transit systems in the study sample. The survey questionnaire was mailed to each of the study participants, who were requested to complete the 10 pages of 58 questions prior to the scheduled site visit. The questionnaire is included as Appendix B. It is designed to collect trend data for 1991-1993; also, transit systems were requested to provide preliminary data for 1994, and an estimate for 1995. The survey is compartmentalized into nine functional areas, in order to facilitate the site visit interviews:

- Management
- Operations
- Finance
- Insurance
- Casualty & Liability Expense Reporting
- Accidents
- Claims (3 pages)
- Tort Law
- Loss Control.

Site Visits. Site visits were conducted at each of the six participant transit systems. Interviews with transit personnel in the functional areas of risk management, legal, and finance allowed observation of transit operations and management techniques and organization first-hand, and obtained more complete and contemporaneous data. The on-site interviews also enriched the quality of the study by enhancing the interpretation of the data, and the reporting of management insights and recommendations.

1.3.4 Review, Compile, and Analyze Data

Survey results and site visit interviews are utilized to analyze the data. Loss development, loss forecasting, and reserve analysis are discussed for both study groups, and claims procedures and programs reviewed. Risk information management systems (RIMS) is described wherever these exist. Trends are observed for risk financing and loss data. Where it is possible to do so in the study, the effects of safety and loss control programs and other initiatives for risk control are noted, particularly as reflected by management insight.

The current study examines in detail how the six transit systems report annual expense in federal object class 506. Areas covered include: the precise component nature of the reported casualty/liability expense, in the context of FTA findings (see Section 2.1.2); adjustments and accruals for plan year or fiscal year; allocated indirect expenses; and any other anomalous content or methodology which impacts this reported expense class.

Full documentation is provided with regard to the reporting of casualty/liability expense (account 506) for each group in the study sample. Trends across and within the sample groups are observed where these exist.

Finally, management observation(s) and recommendation(s) for improvement are recorded when available and warranted. Management observations are used extensively, to provide insight into observed trends and other significant findings.

1.3.5 Present Findings

Most of the study findings are presented in narrative format, and aggregated for the two groups in the study sample. Commentary and study exhibits include major findings in the area(s) of losses, claims, casualty/liability expense, and cost of risk. Where useful, specific findings could be related to a particular transit system in the sample by citing the agency's unique numeric code (A2, etc.) in the study sample. Management observation and recommendations are included throughout the study findings in narrative and exhibit form.

2.0 BACKGROUND AND IMPETUS FOR THE STUDY

Casualty/liability expense was a major issue for public transit in the mid-to-late 1980s due to the well-documented insurance crisis of that period which was characterized by high premium rates and limited amounts of available coverage. Legal factors which were prevalent during this period included the elimination of sovereign immunity¹ and the alleged litigation explosion in the area of tort damage awards. Combined, these factors created heightened Congressional interest in transit tort liability, and in 1992 Congressional hearings² uncovered the matter of transit property's unique exposure. During the hearings, Representative Carr³ made these statements: "If we are going to do the things we say we are going to do regarding safety, we should not allow people to have two bites at the apple. We are either going to guarantee their safety through a lot of expense and effort up-front and limit their awards from intentional misconduct at the end, or we should dispense with the expense of up-front safety requirements and then just let them have at it with whatever is allowed at the end What if we lost every claim against the [FTA], how much money would we have to appropriate to pay the claims?"

This study is an attempt to use a small sample of U.S. bus-mode transit systems which are representative of diverse geographic locations and fleet sizes, to contemporaneously investigate Representative Carr's expressed concern regarding the relationship between transit system safeguards represented in total cost of risk, and tort liability. Past and present studies in the areas of (I) cost of risk, (ii) insurance, and (iii) tort liability are discussed below.

2.1 COST OF RISK

Efforts to describe or benchmark the cost of risk have generally been in response to transit's need to contain operating cost in the face of an unstable insurance market and declining federal assistance. This section explains some significant findings, past and present, in the broad area of cost of risk. Past studies include those by Abacus Technology Corporation, the FTA, the Risk and Insurance Management Society, and the Transit Cooperative Research Program.

¹ Sovereign immunity pertains to the body of law related to governmental liability, whereby a public entity is absolved of liability in its official acts and therefore cannot be sued. In the U.S. prior to 1946, most public entities could not be sued without their own consent, unless Congress waived or qualified their immunity. In recent decades, state supreme courts began to overturn the doctrine of sovereign immunity. Subsequently, many legislatures have reinstated immunity, but they did not make the immunity absolute.

² Department of Transportation hearings before a Subcommittee of the Committee on Appropriations of the U.S. House of Representatives, 102nd United States Congress.

³ Representative Bob Carr, Democrat, Sixth District, Michigan.

2.1.1 Abacus Technology Corporation

In 1989, Abacus Technology Corporation published a study⁴ to examine safety, loss control, and risk management programs and practices at 17 bus transit agencies. The study was sponsored by the FTA in response to the insurance crisis of 1985-86, and declining federal appropriations for mass transit agencies due to efforts at that time to reduce the federal deficit. The Abacus Technology study is important because it is one of the earliest investigations which addressed a composite cost of risk index. The study found, for the sample of 17 transit systems, that the total cost of risk consists of losses, safety and loss control program cost, risk management program cost, claims handling, and insurance premiums. Of special interest is the finding that, for the transit agencies studied, \$.0485 of every dollar spent on operating expense was spent for the cost of risk, as defined by the study. Exhibit 2-1 shows the mean percent of operating expenses for each component of the cost of risk, for the transit sample studied in the Abacus Technology project.

EXHIBIT 2-1 The Cost of Risk Among 17 Transit Agencies

Mean Percent of Operating Expenses

	Contractor- Managed Transit Agencies	Regional Transit Agencies	County/ Municipal Transit Agencies	All Transit Agencies
<i>Sample Size:</i>	<i>4 Agencies</i>	<i>9 Agencies</i>	<i>4 Agencies</i>	<i>17 Agencies</i>
Total Cost of Risk Elements				
(1) Losses	2.37	2.10	3.61	2.68
(2) Safety & Loss Control Program Cost	0.70	0.60	0.57	0.62
(3) Claims Handling & Risk Management Cost	0.84	0.86	0.38	0.71
(4) Premiums	1.31	0.88	0.62	0.84
Percent Operating Expense for Total Cost of Risk				
	5.22	4.44	5.18	4.85

Source: Safety, Loss Control and Risk Management: An Assessment of Practices at 17 Bus Transit Agencies, Abacus Technology Corporation, April 1989, p.3-3.

⁴ Abacus Technology Corporation, Safety, Loss Control and Risk Management: An Assessment of Practices at 17 U.S. Bus Transit Agencies, April 1989, p.3-3.

The Abacus Technology study found that losses were the single largest element (55 percent) in the total cost of risk, and that bus accident losses made up 51 percent of total losses for the agencies sampled. With regard to bus accidents, the study said:

"This area covers losses of property damage or bodily injury to passengers, pedestrians, or other motorists caused by transit bus operation. Losses in this area are related to traffic accidents involving collisions and passenger accidents not due to collisions Bus accidents are the leading source of claims against the transit agencies."

Significant findings with regard to documented bus accidents⁵ among the Abacus Technology sample included the following:

- Bus operator negligence was the leading cause of accidents which were deemed "preventable" by the transit agency.
- Passenger carelessness and other vehicle driver negligence were the leading causes of "non-preventable" accidents.
- Rear-end collisions and collisions at intersections involving improper turning were the most likely types of accidents cited in the study.
- Bus operators exceeding the speed limit and mechanical bus defects were *never* stated as accident causes.

In response to the various findings of the Abacus Technology study, the current study focuses on *auto/bus vehicular liability* in examining the current sample of transit systems' experience with claims and loss for bus operations.

2.1.2 Federal Transit Administration

The FTA published a study⁶ in 1992 which reviewed cost of risk in the more focused context of federal reporting obligations for transit agencies. That is, the FTA noted that federal object class 506 Casualty/Liability Expense included ten specific cost elements which may be summarized into four main cost components:

- Premiums for insurance
- Payouts for uninsured occurrences

⁵ Findings in the Abacus Technology study for bus accident volume and frequency are presented for a three year average, 1985-1987.

⁶ Adams, Ross W., Issue/Assessment Paper Number 20: Tort Liability and Reform for Transit Operating Agencies, February 29, 1992.

- Provision for uninsured (or self-insured retention)
- Recoveries (credits) or amounts received from insurance companies and others (third parties) who are held liable for damage to transit property and personnel.

In the study, the FTA estimated projected cost levels for federal object class 506 Casualty & Liability Expense: ". . . projections were made to 1995 for this casualty/liability expense. The casualty/liability expense for all transit systems in 1995 was estimated, using linear regression techniques, to approximate \$680 million." Section 15 data from 1978 through 1992 was used to perform the linear regression, and 436 transit systems were included in the analysis. The FTA advised, however, that since the 1985 insurance crisis, ". . . the cost of casualty and liability insurance, as percent of total operating cost, has experienced a slower rate of growth. This trend is noticeable for all sizes of transit systems." Although no documentable basis for this observation was given in the study, it was implied that initiatives in the area of tort reform contributed to this trend. The study concluded by noting that more data were needed to validate findings in the particular area of "these emerging practices [of tort reform]."

2.1.3 Recent Studies

Two studies, by the Risk and Insurance Management Society and Michael M. Kaddatz, were among those which have focused on cost of risk for transit in the past two years.

Risk and Insurance Management Society, Inc. The Risk and Insurance Management Society, Inc. (RIMS) annual survey⁷ of corporate risk management expenses indicated that in 1993 U.S. companies spent an average of \$7.70 of every \$1,000 of revenue on the cost of risk, defined in the survey as net insurance premiums, unreimbursed losses, and administrative costs. With regard to this finding, RIMS stated: "The good news is the cost of risk decreased for the first time in ten years, due to the effectiveness of various risk management techniques." However, the survey also found that liability risk financing costs have increased 1 percent from 1992, comprising 39 percent of the total cost of risk in 1993. The survey's authors concluded that retaining more risk (self-insuring at a higher level) provided significantly greater cost control, since companies with high risk retentions reported a 10 percent drop in average risk financing cost. Some additional survey findings were:

- Risk management department size increased 12 percent to 5.5 full-time-equivalents in 1993.
- The use of outside service firms declined for most risk management functions, but risk management departments are most likely to hire outside firms for claims management services.

⁷ This survey was published in Business Insurance, May 1, 1995.

- Legal departments were becoming more involved in handling some risk management functions, especially liability claims management.
- Risk managers were more likely to pay agents and brokers a fee for service rather than a commission for auto liability lines of coverage.
- Large organizations continue to spend a much smaller percentage of their revenue on risk management than small organizations.

Michael M. Kaddatz. In early 1995, Michael M. Kaddatz produced a Transit Cooperative Research Program (TCRP) synthesis study⁸ which examined risk management practices for small/medium, urban, and rural bus systems. Kaddatz defined the cost of risk as consisting of the following elements:

- Losses and reserves for uninsured
- Insurance premiums
- Risk control expenditures
- General and administrative costs.

Kaddatz noted that sources of reliable risk cost data are not readily available. He stated: "Perhaps the most useful benchmarking data on risk is available to those systems that participate in pools. Since transit pools have only been in existence for ten years, the data is just now developing the maturity that makes it very useful." Kaddatz said that his sample of bus systems did not generally use formalized techniques to measure risk, but rather they ". . . tend[ed] to rely on developing loss scenarios that assign[ed] maximum potential loss values using the published information about the losses of others, rules of thumb and statutory liability maximums where applicable."

Kaddatz concluded that insufficient data exist to show which risk management techniques are most effective in reducing the cost of risk. He stated: "Research could be performed on the effectiveness of various loss control techniques in reducing the cost of risk over time. These would allow transit agencies to concentrate on the activities that will have the greatest potential of reducing future losses."

2.2 **INSURANCE**

Insurance premiums are one major component of the total cost of risk. The insurance industry is generally cyclical in that when interest rates are high, insurers are provided with greater returns on their investments, and consequently surplus grows. This in turn raises coverage levels on existing and available policies, giving insurers confidence to expand coverage into higher risk areas, and lower premiums. This is what is known as a "soft" insurance market or buyers market; many competing insurers also drive premiums down.

⁸ Kaddatz, Michael M., Risk Management for Small/Medium Urban & Rural Bus Systems, Transit Cooperative Research Program Topic SG-01, February 1995.

When interest rates fall, income is cut for the industry and losses tend to reduce capacity and increase premiums. Some insurers may go insolvent and drop out of the market. This creates even higher premium rates, and the situation is described as a "hard" insurance market or a sellers market. The insurance market is heavily influenced by statutory regulations at both the state and federal level. This section reviews major contemporary insurance classes (insurance types) for public transit, and includes observations regarding recent trends in the U.S. insurance market for transit liability.

2.2.1 Insurance Classes for Transit

There are three main types or classes of primary (not excess) insurance for contemporary public transit systems:

- **Conventional Insurance** The purchase of commercial insurance from a licensed insurer. This is the transfer of financial responsibility for the loss to an unrelated entity (insurer) in exchange for money (a premium). Administrative functions such as claims and trending may be provided by the commercial insurer, by a third-party administrator (TPA), or performed in-house by the transit system.
- **Self-Insurance** Also called risk retention, this approach reflects the ability of a transit system to absorb retained losses and still meet major financial and operating requirements. Under a self-funded approach, transit systems pay losses from operating expense or from a reserve fund. Most self-insurers therefore provide for a cap,⁹ or stop-loss, beyond which purchased excess insurance covers claims. Administrative functions such as claims and loss trending may be provided in-house by the transit system, or may be contracted out.
- **Insurance Pool(s)** An agreement among a group of transit systems to jointly fund each others' losses up to each member's deductible. Members make contributions to the pool, which in turn pays losses and purchases administrative functions such as loss control and safety, claims management, record keeping, and legal and actuarial services.

Other prevalent insurance types which generally function as secondary (not primary) protection are excess insurance, reinsurance, and insurance captives. These insurance types, working in conjunction with the primary classes, provide risk financing for public transit. Excess insurance protects against catastrophic or major loss, beyond conventional insurance or self-insurance limits. Reinsurance is excess coverage purchased through a primary commercial insurer. An insurance captive is a company subsidiary established by a non-

⁹ A wide range of approaches to retention caps are suggested in risk management literature. One general rule often used by transit agencies is that the total for all losses annually should not exceed one percent of total annual revenues.

insurance organization to exclusively insure the risks of the parent company and its affiliates. Because the risks insured in such an insurance subsidiary do not leave the immediate corporate family, there really is no transfer of risk. Therefore, risk insured through a captive is often described as self-insurance. Insurance captives, however, are regulated more closely than pools; this can increase organizational expenses by 2 to 5 percent.¹⁰

2.2.2 The Insurance Market

In 1992 the FTA¹¹ reported that transit agencies were still faced with many of the insurance-related problems which they had encountered in the late 1980s, when the market was described as being in crisis. That is, transit systems still experienced high premium cost, coverage restrictions, and policy renewal problems. The study noted that in 1992, large and medium-sized transit systems were mainly self-insured; smaller systems had returned to commercial (conventional) insurance, since a large variety of underwriters had re-entered the market since the insurance crisis of the late 1980s.

A 1994 TCRP synthesis study¹² reported that, "Within the last several years, many public entities have encountered very large and rapid premium increases, making the practicality of insurance doubtful." This is attributed to the rapidly increasing number of tort claims and to the very large awards made in the case judgments. In discussing the unique risk which public transit faces, the 1992 FTA study¹³ noted that "the basic problem with transit . . . is that ride-sharing 'trends to' concentrate passenger exposure, or risk. Given the financial impacts on the insurance industry in 1984-1985, any potential to increased risk (suggests) the need for higher insurance limits Thus, insurance [becomes] hard to obtain and expensive."

Currently, the municipal insurance liability market is highly competitive or "soft." John R. Rath, director of risk management for Milwaukee County, Wisconsin, which is self-insured for most liability exposures, notes¹⁴, "We have had no increases in our liability premiums the past year or two." Jim Smith, president of American Governmental Risk & Insurance Programs (AMGRIP), also comments¹⁵, "It's a very, very dynamic market right now. The pools around the country are going to see a lot more competition from insurance companies in a way they haven't over the past five years. Pools have dominated the

¹⁰ MacDorman and Associates, Risk Management Manual for the Public Transit Industry, Vol. 2, August 1988, p.IV.29.

¹¹ Adams, p.26.

¹² Lewis, Russell M., Managing Highway Tort Liability, National Cooperative Highway Research Program, Synthesis of Highway Practice 206, 1994, p.15.

¹³ Adams, p.9.

¹⁴ Business Insurance, Special Report on Government Risk Management, June 5, 1995, p.12.

¹⁵ Ibid., p.17.

governmental arena for the past three to five years and now I think you're going to see a real movement on the part of some commercial insurance companies . . . I think the insurance industry has a better understanding of the public sector." Although public transit is a unique risk, conditions for municipal liability exposures are often quite similar.

2.3 TORT LIABILITY

Tort liability is the obligation to make payments for a civil (not criminal) wrong. Torts include negligent acts and other acts for which one can be held strictly liable, even in the absence of negligence. A tort is defined by the presence of four conditions¹⁶:

- There is a duty to act
- There is a breach of that duty
- The breach of duty caused the incident
- The incident resulted in the presence of damage(s).

In its 1992 study, the FTA¹⁷ used AASHTO¹⁸ data and linear regression techniques to project in 1992 that by 1995 there would be approximately 33,000 tort actions filed against state transportation agencies, and tort settlement amounts totalling approximately \$160 million. This section examines current legal issues for transit agency tort liability, and reviews salient aspects of the transit claims process in the context of managing current and potential tort liability.

2.3.1 Legal Issues

In 1946, Congress waived sovereign immunity for some tort suits by enacting the Federal Tort Claims Act. The FTA¹⁹ stated: "With exceptions, this Act made the United States liable for injury or loss of property, or personal injury or death caused by the negligent or wrongful act or omission of any employee of the government while acting within the scope of his office or employment, under circumstances where the United States [would be liable] if a private person would be liable in accordance with the law of the place where the act or omission occurred." Tort law is primarily state law however, and in the late 1970s and early 1980s most states removed their own protection of sovereign immunity. The FTA²⁰ noted that many observers of tort law believed that the removal of state sovereign immunity resulted in

¹⁶ This information was provided by Ms. Mattie Condray, Staff Counsel for the American Public Transit Association (APTA) and Staff Advisor for the APTA Legal Affairs Committee, in a telephone conversation June 22, 1995.

¹⁷ Adams, p.v.

¹⁸ American Association for State Highway and Transportation Officials.

¹⁹ Adams, p.4.

²⁰ Ibid.

the very high volume of tort claims and suits which began to be observed during the mid-1980s and which continues in variable measure in recent times.

Recently, Larry Thomas²¹ wrote that a transit system is especially likely to be held liable for tort claims arising out of the operation of bus or rail services or facilities. In one recent court case²², it was held that driving or operating a bus is the exercise of a ministerial function, which is not precluded by the discretionary function exemption²³. Thomas conducted a survey using 40 transit agencies and noted that for those agencies with bus-only operations, the average percentage of tort liability claims in relation to rider fees was 5.26 percent, with a high of 17.29 percent and a low of 1.13 percent.

Business Insurance²⁴ reports: "Civil justice issues remained important for risk managers with open-ended punitive and non-economic damage²⁵ awards being ranked as their top concern for a seventh year in a row. Some 85 percent of risk managers ranked this issue as of high or above-average importance."

Mattie C. Condray, who is Staff Counsel for the American Public Transit Association, noted²⁶ that tort reform is on the Congressional agenda. According to Ms. Condray, major contemporary issues for public transit tort reform are the following:

- Punitive damages, and the related issue of the incentive concept, i.e., the debate over whether non-economic awards serve to raise the level of transit's standards for accountability by providing an incentive for maintaining those standards;
- Insurance, and the cost of coverage for potential liability in the face of large jury awards;

²¹ Thomas, Larry W., "State Limitations on Tort Liability of Public Transit Operations," Legal Research Digest, Transit Cooperative Research Program Project J-5, December 1994, p.13.

²² *Garza v. Salvatierra*, Texas Court of Appeals, 1992.

²³ With regard to the discretionary function exemption, Larry Thomas writes: "The exemption for discretionary actions generally protects agencies from negligence arising out of decisions and activities that involve balancing social, economic and political policies and objectives It is generally held that when an agency's employees perform ministerial tasks at the operational level, those undertaking such tasks may exercise very little discretion or judgment."

²⁴ Business Insurance, "What Worries Risk Managers?", April 24, 1995, p.2.

²⁵ Non-economic damages are usually punitive damages which may be awarded to serve as an incentive designed to prevent the offending act from (ever) being repeated; non-economic damages are not intended to cover loss(es) associated with, e.g., medical cost or lost wages.

²⁶ From a telephone conversation with Mattie Condray, June 22, 1995.

- Use of alternate dispute resolution (ADR) techniques such as mediation and arbitration, to settle tort claims;
- Fraudulent claims.

Thus, legal issues in contemporary tort reform impact claims and loss control for public transit systems.

2.3.2 Claims

The 1994 TCRP synthesis study²⁷ noted that with commercial insurance, there is a tendency for government or municipal personnel to think of tort liability as the insurance company's problem, and this may reduce incentives within the organization to effectively manage claims. The TCRP believed that tort liability poses the greatest threat to unplanned costs for transit systems, and he provided the following general objectives for managing tort liability through the claims process:

- Reduce the number and severity of crashes
- Reduce claims
- Handle or dispose of minor claims
- Enhance the defensive posture of the agency
- Vigorously defend the agency in claims carried through the litigation process.

Where tort claims and cases are "processed" rather than managed, transit risk management is compromised. Hallmarks of an effective risk management program include: formalized and well-managed claims handling, including filing and retrieval; thorough and orderly claims investigation; a sound and thoughtful settlement program; loss trending and loss forecasting; and, timely loss reserve analysis.

²⁷ Lewis, p.15.

3.0 STUDY FINDINGS

The study findings are presented in three main topical areas:

- Casualty & Liability expense as reported in Federal object class 506
- Claims and loss experience
- Risk financing (the provision/purchase of insurance).

Highlights of the study findings include the observation that casualty & liability expense per million passenger miles is significantly lower for the larger transit systems in the study, as compared to the smaller systems. For the largest public transit agencies, total casualty & liability cost has in fact declined by 24 percent over the period 1989-1993.

The presence of jurisdictional statutory maximums or legislated caps on civil liability was found to reduce the number of large claims (claims greater than \$25,000) for the study sample, but did not show an effect of reducing total tort liability payments relative to rider fees.

The study also finds that transit systems in the sample are presently attempting to internally comply with governmental accounting standards which pertain to the reporting of premiums and losses.

Finally, transit risk managers report no recent problems with purchasing insurance or obtaining coverage renewals.

Appendix C is a summary of transit responses to the survey questionnaire (Appendix B)¹ which was completed in the course of site visits which were conducted in August 1995.

3.1 CASUALTY & LIABILITY EXPENSE, FEDERAL OBJECT CLASS 506

Exhibit 3-1 displays casualty & liability expense for both study groups A and B for the period 1991-1994.² Exhibit 3-1(a) shows total expense over the period, and Exhibit 3-1(b) shows relative casualty & liability expense per million passenger miles. It is clear from these graphs that although total casualty & liability expense is higher for the larger group A, relative expense is lower for this group for all of the years observed. This finding would appear to indicate a higher level of cost efficiency for the larger group of transit systems in the sample. It is particularly interesting in the context of the observation presented in Section 3.1.3, Casualty & Liability Expense Macro Findings, that total cost levels for casualty & liability expense for large transit systems in the United States have declined by 24 percent over the period 1989-1993.

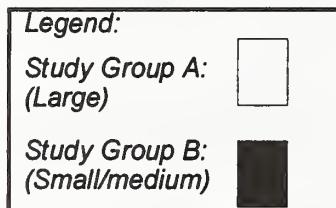
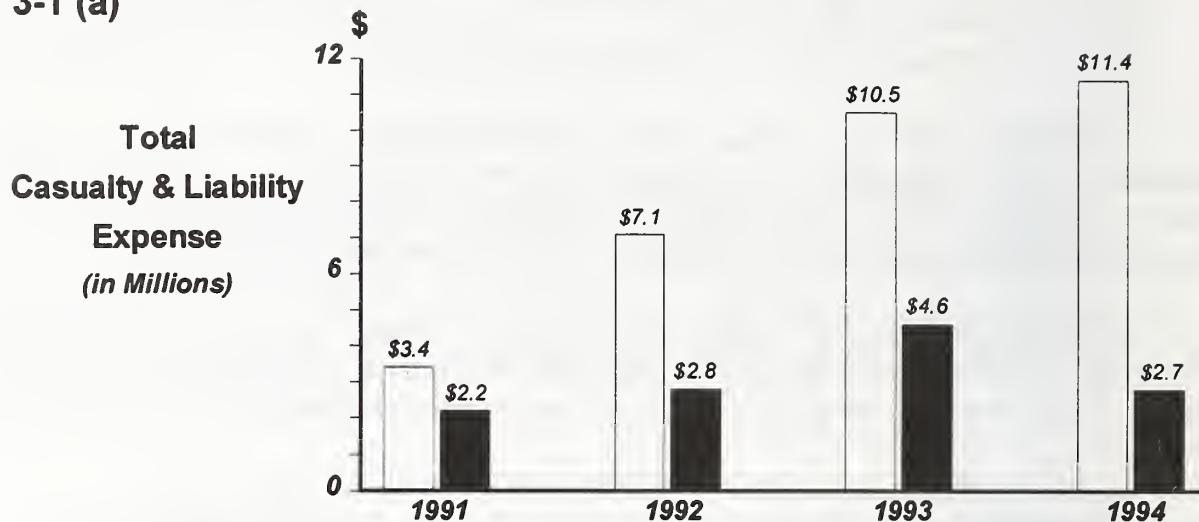
¹ Reference Section 1.3.3 Collect Data.

² Source is Section 15 National Transit Database.

EXHIBIT 3-1
Casualty & Liability Expense, 1991-1994

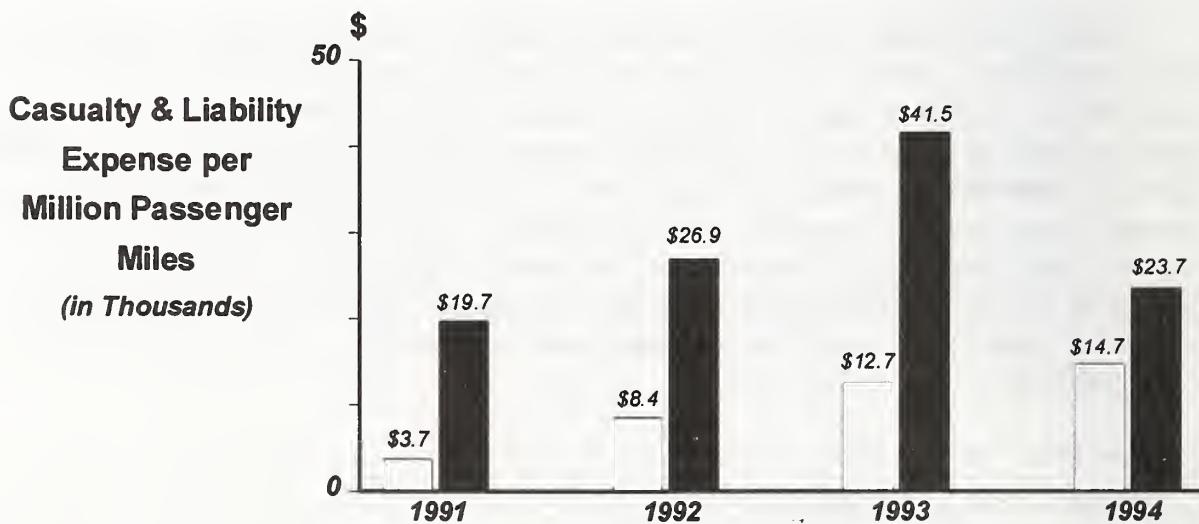
Total Casualty & Liability Expense
Study Groups A and B

3-1 (a)



Relative Casualty & Liability Expense
Study Groups A and B

3-1 (b)



Source: Section 15 National Transit Database

Public transit agencies have not developed a uniform methodology to report casualty & liability expense. Premiums for insurance and payments for incurred losses are normally reported separately in Federal object class 506, but various accounting treatment is generally given to the reporting of loss reserves, recoveries or subrogation amounts, and attorney fees.

Within the study sample, a *systematic* methodology for reporting casualty & liability expense is observed for each study group A (transit systems with bus fleets of 500 or more) and group B (transit systems with bus fleets which number less than 500). The smaller transit systems generally report casualty & liability expense elements in greater detail than do the larger systems. The findings with regard to casualty & liability expense are therefore presented separately for the two study groups. Analysis of findings includes cross-sample and within-group observations of regression, r squared, for casualty & liability expense with other (specified) indicators of operating performance. The objective of the regression analysis is to highlight relationships, wherever these exist, between casualty & liability expense and (1) claims paid (dollars), (2) number of large claims which exceed \$25,000, and (3) passenger miles. This type of relational analysis is required due to the lack of transit industry standards with regard to Federal reporting of casualty & liability expense.

In order to help validate the 1992 study projections³ that by 1995 total U.S. public transit casualty & liability expense would be \$680 million, this study also examines aggregate casualty & liability expense levels for 1993, which is at this time the most recent year of available Section 15 transit statistics. Consistent with FTA research, the study reviews expense levels for public transit systems with bus fleets of 1,000 and greater; and systems with bus fleets of 500-999.

3.1.1 Casualty & Liability Expense Reporting for Larger Transit Systems

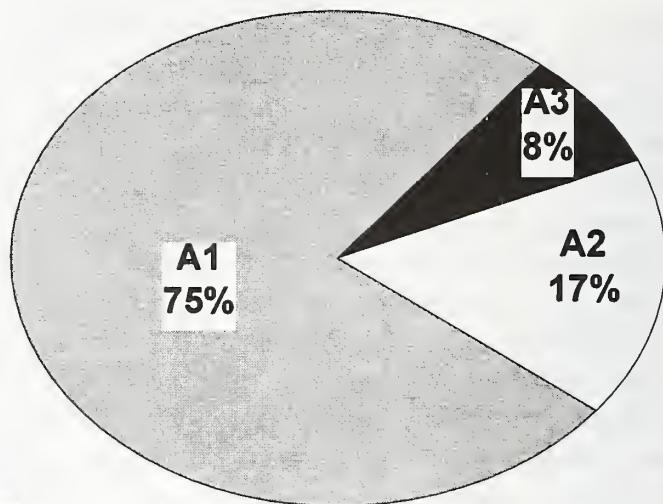
Exhibit 3-2 shows proportional casualty & liability expense for the three participants in study group A, for the recent year 1994. The data collected in the site visits revealed that for this group of larger transit systems, the reporting of casualty & liability expense tended to be at a more summary level across the primary cost elements of premiums and losses. Expense reporting for the group generally included detailed payments for physical damage insurance, for both revenue equipment and buildings & grounds, as well as premiums for bodily injury and property damage insurance. Losses however were normally reported in the aggregate for the group of larger transit systems. Aggregate losses reported for study group A generally included the following diverse elements:

- Total claims settlements⁴
- Loss reserves
- Loss subrogation or recoveries
- Attorney fees.

³ Adams, page iv.

⁴ Includes both claims payments as well as settlements and judgments for lawsuits.

EXHIBIT 3-2
Proportional Casualty & Liability Expense for Study Group A
for 1994



Casualty & Liability Expense, 1994

A1:	\$ 8,570,663
A2:	\$ 1,935,967
A3:	\$ 870,621
<i>Total Study Group A:</i> \$11,377,251	

For all three participants included in study group A, obtaining cost detail from the accounting system to support reported casualty & liability expense was arduous. In all cases, accounting files were manually "massaged" by agency staff, then cross-referenced with separate risk management shadow-systems⁵ in order to validate the amounts. Through this labor-intensive process the reported casualty & liability amount in Federal object class 506 was ultimately verified and supported. Appendix D is a sample of study group A accounting support for reported casualty & liability expense. This year-end data tabulation was a product of transit system A2's accounting system and some manual manipulation. Subtotals of casualty & liability expense for each year were obtained manually.

3.1.1.1 Reported Premiums and Losses

Exhibit 3-3 displays casualty & liability expense for 1991-1994 by the two major categories of premiums and losses, for representative transit systems (A2, B1) in each study group. For the larger group A, losses were found to be a consistently more significant cost

⁵ A shadow-system is an auxiliary system which is set up parallel to a primary (data base or data bank) system to meet particular and specific needs of users on a regular or ad hoc basis. Shadow systems are generally "patchwork systems," awkward to navigate and lacking relational capability to primary data.

element than for the smaller group B, for all years observed. Both participants represented in the exhibit were self-insured, but only A2 operated in a jurisdiction where there were statutory maximums for tort liability. (This study finds that, contrary to popular view, statutory maximums are not necessarily related to low total losses in the sample of participants, but mainly serve to lessen the incidence of numbers of large claims.)⁶ While risk financing and statutory maximums may play a part in the relative share of losses for the two study groups, it was also observed through the site visits that management style and philosophy as expressed in the defensive posture of the agency were very effective indicators of the relative loss volume across the entire sample. Wherever a Risk Manager was knowledgeable and aggressive in the defense of the agency (i.e., interested in daily claims activity, and actively engaged with lawyers and claims adjusters in seeking out remedies and strategies for agency defense), this transit system enjoyed a benefit of lower volume of losses per passenger mile than did those agencies with less knowledgeable or aggressive Risk Managers.

EXHIBIT 3-3

Relative Premiums and Losses for Representative Large and Small Agencies

	1991		1992		1993		1994	
A2								
Premiums	343,143	24%	239,528	18%	264,461	19%	249,532	13%
Losses	1,068,900	76%	1,111,084	82%	1,153,418	81%	1,686,434	87%
Total C&L	1,412,043		1,350,612		1,417,879		1,935,966	
B1								
Premiums	703,709	73%	789,511	49%	755,994	29%	744,658	50%
Losses	265,259	27%	813,601	51%	2,624,682	78%	752,275	50%
Total C&L	968,968		1,603,112		3,380,676		1,496,933	

Source: Casualty & Liability Expense, 1991-1994

⁶ Reference Section 3.2.2.1 Statutory Maximums.

3.1.1.2 Regression Analysis for the Larger Systems (Group A)

Exhibits 3-4 and 3-5 are study group A (larger systems) regression analyses⁷ of within-group and cross-sample findings. The study reports on the strength of the relationship between casualty & liability expense and:

- Claims paid
- Number of claims greater than \$25,000
- Passenger miles.

Findings indicate a strong relationship between casualty and liability expense and passenger miles for the larger systems. For the within-group analysis, the r squared statistic is very high for two of the three participants, showing values of 0.87 and 0.97 respectively (passenger miles for study participant A3 are anomalous, with decreases in 1993 and 1994). The cross-sample analysis uses 1994, a representative data year, to point up the strong relationship for casualty & liability expense with both passenger miles and the number of claims greater than \$25,000. The r squared statistic shows values of 0.96 and 0.97 for this data. This finding is consistent with the earlier observation that expense levels of large transit systems are very heavily influenced by large claims. They have greater proportionate losses for total casualty & liability expense than do smaller systems. This finding however is also influenced by the degree of statutory immunity which is present in the transit system's locale. It appears from the data in a 1994 study that those systems with statutory immunity, regardless of size, experience a lower incidence of large claims payments.⁸

⁷ Regression analysis is a statistical application used to indicate relationship or dependency of one data set on other data sets. The R Squared statistic indicates the reliability of the regression, where a value of 0 suggests no dependency and a value of 1 suggests perfect dependency. Values of R Squared between 0 and 1 suggest relatively stronger degrees of dependency. For example, the value of 0.97 shows a high level of confidence in the relationship of the data sets.

⁸ Reference Section 3.2.2.1 Statutory Maximums.

EXHIBIT 3-4
Within-Group Regression Analysis

PARTICIPANT A1

Year	Casualty & Liability			Passenger Miles (000's)
	Expense	Claims Paid	# Claims > \$25K	
1991	\$1,392,883	\$3,737,488	26	624,972
1992	\$5,122,254	\$3,235,535	34	531,648
1993	\$8,173,938	\$1,889,269	27	517,350
1994	\$8,570,663	\$1,499,540	31	450,932

Regression Output:

Correlation Coefficient, r squared

Scenario 1	0.91	Casualty & Liability Expense by Claims Paid
Scenario 2	0.08	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.87	Casualty & Liability Expense by Passenger Miles

PARTICIPANT A2

Year	Casualty & Liability			Passenger Miles (000's)
	Expense	Claims Paid	# Claims > \$25K	
1991	\$1,412,043	\$1,365,175	10	179,917
1992	\$1,350,613	\$963,996	7	183,124
1993	\$1,417,879	\$1,440,768	14	181,850
1994	\$1,935,967	\$1,293,191	10	212,473

Regression Output:

Correlation Coefficient, r squared

Scenario 1	0.04	Casualty & Liability Expense by Claims Paid
Scenario 2	0.00	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.97	Casualty & Liability Expense by Passenger Miles

PARTICIPANT A3

Year	Casualty & Liability			Passenger Miles (000's)
	Expense	Claims Paid	# Claims > \$25K	
1991	\$601,593	\$558,599	3	115,733
1992	\$776,577	\$480,848	1	134,870
1993	\$884,015	\$563,781	2	124,800
1994	\$870,621	\$154,140	0	111,499

Regression Output:

Correlation Coefficient, r squared

Scenario 1	0.21	Casualty & Liability Expense by Claims Paid
Scenario 2	0.49	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.01	Casualty & Liability Expense by Passenger Miles

EXHIBIT 3-5
Cross-Sample Regression Analysis - Group A

Study Group A
for 1994

Year	Casualty & Liability		# Claims > \$25K	Passenger Miles (000's)
	Expense	Claims Paid		
Participant A1	\$8,570,663	\$1,499,540	31	450,932
Participant A2	\$1,935,967	\$1,293,191	10	212,473
Participant A3	\$870,621	\$154,140	0	111,499

Regression Output:

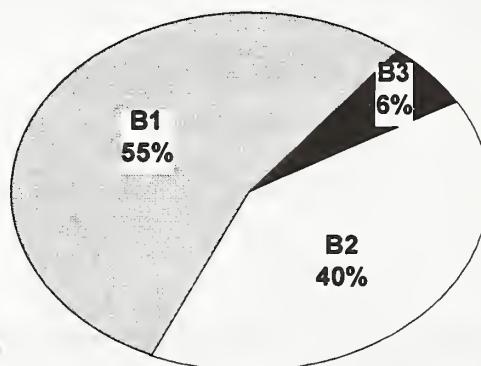
Correlation Coefficient, r squared

Scenario 1	0.51	Casualty & Liability Expense by Claims Paid
Scenario 2	0.96	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.97	Casualty & Liability Expense by Passenger Miles

3.1.2 Casualty & Liability Expense Reporting for Smaller Transit Systems

Exhibit 3-6 shows proportional casualty & liability expense for the three participants in study group B, for the recent year 1994. The site visits and the source data both indicated that the smaller transit systems reported casualty & liability cost elements in much greater detail than did the larger systems. Appendix E shows a sample source document from study group B. Although manual calculations were required to subtotal for cost elements, the total amount for (annual) casualty & liability expense was captured in the report, and the specific cost elements were represented in various account codes.

EXHIBIT 3-6
Proportional Casualty & Liability Expense for Study Group B
for 1994



Casualty & Liability Expense, 1994	
B1:	\$1,496,933
B2:	\$1,088,944
B3:	\$157,453
<i>Total Study Group B:</i>	<i>\$2,743,330</i>

3.1.2.1 Reported Premiums and Losses

Exhibit 3-3⁹ displays the typical study finding that, for the smaller systems in the sample, losses and premiums are much more closely aligned (similar in percentage share) than for the larger systems. Year 1994 is in fact equally split for the smaller systems in study group B1. This may be due to the site observation that two of the three study group B participants were (by their own report) currently in non-compliance with Governmental Accounting Standards Board Statement No. 10 (GASB 10)¹⁰, Accounting and Financial Reporting for Risk Financing and Related Insurance Issues. This statement establishes accounting and financial reporting standards for risk financing and insurance-related activities of state and local government entities. The non-compliance of these two study groups would cause their losses to be understated due to the treatment of liabilities on a "pay as you go" basis.

3.1.2.2 Regression Analysis for the Smaller Systems (Group B)

Exhibits 3-7 and 3-8 are study group B (smaller systems) regression analyses for within-group and cross-sample findings. The study examines the strength of the relationship between casualty & liability expense and:

- Claims paid
- Number of claims greater than \$25,000
- Passenger miles.

Findings indicate the strong relationship between casualty & liability expense and both passenger miles and the amount of total claims paid, for the smaller systems. The number of large claims appears to be a relatively weak influence on total casualty & liability expense for the smaller systems in the within group sample (the r squared statistic is calculated at below 0.5 in all three cases). These samples are, surprisingly, not highly influenced by the findings of a 1994 study showing that jurisdictions with statutory maximums on tort recovery had a significantly lower percentage of large claims.¹¹ Only participant B2 had statutory maximum in its jurisdiction. Therefore the low r squared values are surprising, since the study group is largely without statutory maximums. However, participant B3, which uses third-party administration for claims handling, had zero claims over \$25,000 for the entire study period 1991-1994. This could cause an effect of reducing the (expected) correlation between casualty & liability and large claims for study group B.

⁹ Reference Section 3.1.1.1 Reported Premiums and Losses.

¹⁰ Government Accounting Standards Board Statement No. 10, Accounting and Financial Reporting for Risk Financing and Related Insurance Issues. Establishes accounting and financial reporting standards for risk financing and insurance-related activities of state and local government entities. Published in November 1989, transit properties have until 1994-95 to implement the standard.

¹¹ Reference Section 3.2.2.1 Statutory Maximums.

EXHIBIT 3-7
Within-Group Regression Analysis - Group B

PARTICIPANT B1

Year	Casualty & Liability			Passenger Miles (000's)
	Expense	Claims Paid	# Claims > \$25K	
1991	\$968,968	\$1,039,597	7	66,109
1992	\$1,603,112	\$735,218	6	63,360
1993	\$3,380,676	\$666,904	5	59,383
1994	\$1,496,933	\$1,218,024	9	61,518

Regression Output:

Correlation Coefficient, r squared

Scenario 1	0.46	Casualty & Liability Expense by Claims Paid
Scenario 2	0.43	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.76	Casualty & Liability Expense by Passenger Miles

PARTICIPANT B2

Year	Casualty & Liability			Passenger Miles (000's)
	Expense	Claims Paid	# Claims > \$25K	
1991	\$984,800	\$603,032	0	39,671
1992	\$1,053,486	\$285,490	3	36,942
1993	\$1,054,898	\$497,903	1	46,772
1994	\$1,088,944	\$298,781	1	48,825

Regression Output:

Correlation Coefficient, r squared

Scenario 1	0.67	Casualty & Liability Expense by Claims Paid
Scenario 2	0.22	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.36	Casualty & Liability Expense by Passenger Miles

PARTICIPANT B3

Year	Casualty & Liability			Passenger Miles (000's)
	Expense	Claims Paid	# Claims > \$25K	
1991	\$153,764	\$90,358	0	5,793
1992	\$162,279	\$20,955	0	4,660
1993	\$169,165	\$27,913	0	5,053
1994	\$157,453	\$36,795	0	5,058

Regression Output:

Correlation Coefficient, r squared

Scenario 1	0.56	Casualty & Liability Expense by Claims Paid
Scenario 2	(0.00)	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.37	Casualty & Liability Expense by Passenger Miles

EXHIBIT 3-8
Cross-Sample Regression Analysis - Group B

Study Group B
for 1994

Year	Casualty & Liability			Passenger Miles (000's)
	Expense	Claims Paid	# Claims > \$25K	
Participant B1	\$1,496,933	\$1,218,024	9	61,518
Participant B2	\$1,088,944	\$298,781	1	48,825
Participant B3	\$157,453	\$36,795	0	5,058

Regression Output:

Correlation Coefficient, r squared

Scenario 1	0.74	Casualty & Liability Expense by Claims Paid
Scenario 2	0.64	Casualty & Liability Expense by # Claims > \$25K
Scenario 3	0.99	Casualty & Liability Expense by Passenger Miles

It is noteworthy that the cross-sample analysis for 1994 (Exhibit 3-8) yields a much stronger r squared of 0.64 for Group B casualty & liability expense vis a vis the observed incidence of large claims. Even the cross-sample demonstrates that claims paid and passenger miles are more closely associated with (have higher r squared statistics for) Group B casualty & liability expense than the incidence of large claims.

3.1.3 Casualty & Liability Expense Macro Findings for Public Transit, 1989 v. 1993

Study findings produced by the FTA in 1992 showed that, as of Section 15 reporting year 1989, the overall casualty & liability expense for public transit was "over \$500 million."¹² The study projected that by 1995 this total expense would be approximately \$680 million. The FTA further examined the average casualty & liability expense levels for transit systems with 1,000 or more revenue vehicles, and for those with between 500 and 999 revenue vehicles. A wide magnitude of difference was observed between these two groups. Specifically, the larger transit systems had an average casualty & liability expense per system which was nine times the average expense per system reported for the group of smaller transit agencies. Exhibit 3-9 summarizes 1989 observations and displays current findings for 1993 data. Total expense for all public transit systems reporting in 1993 was \$556,909,711.

It appears from the observation of this macro data that cost growth for transit casualty & liability expense has not achieved the rate which was forecast by the 1992 study. A review of the chart in Exhibit 3-9 shows that the cost magnitude factor¹³ for the two large groups of

¹² Adams, page iv.

¹³ The cost magnitude factor is the multiplier calculated from division of the average cost for Group (1) 1,000 or more vehicles, by the average cost for Group (2) 500-999 vehicles:

transit systems has declined by one-half over the period 1989-1993, from 9.25 to 4.7. The observation of the 9.25 factor in the 1989 data elicited interest, but the report did not postulate causes of such a large degree of average cost difference between the two groups of large systems. This study will likewise not attempt to explain or postulate causal relationships, since doing so is beyond its scope. However, the data in Exhibit 3-9 show that for the group of 500-999 revenue vehicles, average casualty & liability cost has grown by 50 percent over the five year period, while cost has declined by 24 percent for the larger group of more than 1,000 revenue vehicles. This observation can be linked to the finding that most larger systems are now self-insured and that there is currently a "soft" insurance market, i.e., one where commercial excess coverage is plentiful and policy renewals are readily available. The impact of these factors would be greater for the largest transit systems, which were affected most harshly during the commercial insurance crisis of the 1980s.

EXHIBIT 3-9
Average Casualty & Liability Expense for Large U.S. Public Transit Systems

	1989		1993	
	No. of Systems	\$	No. of Systems	\$
(1) 1,000 or more revenue vehicles	9	\$37 M	10	\$28 M
(2) 500 - 999 revenue vehicles	14	\$ 4 M	16	\$ 6 M
cost factor*		9.25		4.7

* multiplier which reflects higher average cost for group (1) over group (2).

Source: Section 15 National Transit Database

1989: \$37 million / \$4 million = cost magnitude factor of 9.25
 1993: \$28 million / \$6 million = cost magnitude factor of 4.70

3.1.4 Study Recommendations

To address the wide diversity of casualty & liability expense reportables across transit systems of all sizes, this study recommends two specific actions:

(1) EACH TRANSIT SYSTEM should include the following cost classes in account 506 for Federal reporting, and assign a unique agency accounting system cost code for:

- Insurance premiums
- Losses paid for uninsured
- Losses paid for within-deductible
- Losses paid for insured
- Loss recoveries & subrogations
- Loss reserves
- Attorney fees.

(2) EACH TRANSIT SYSTEM should report Federal casualty & liability expense in total and in three parts consisting of:

- Insurance premiums
- Losses
- Attorney fees.

3.1.5 Suggestions for Further Study

To follow-up on the study's observation that large transit systems have achieved significant cost savings over the period since 1989, further study should address precisely where and how these savings have been realized. Longitudinal data is not presently available within U.S. transit systems to demonstrate the relative impact of transit spending for losses and premiums. The study site visits indicated that the prevailing attitude among transit risk managers in the sample is that, especially during the late 1980s and early 1990s, it made no difference whether casualty & liability funds were used for premiums or for losses, since both constitute risk financing. As a result of this perception, which is underscored by the Federal reporting requirement which allows for a mix of related cost elements to be included in object class 506 (Casualty & Liability expense), much valuable cost history has been permanently lost. This situation is presently made worse by the (observed) uneven compliance with GASB 10 - Accounting and Financial Reporting for Risk Financing and Related Insurance Issues¹⁴ - and GASB 11 - Measurement Focus and Basis of Accounting¹⁵, two public entity accounting standards which will require transit systems to implement uniform changes in the way they

¹⁴ Reference footnote No. 11.

¹⁵ Government Accounting Standards Board Statement No. 11, Measurement Focus and Basis of Accounting. Published in May 1990, it must be implemented by the year 2000. This standard requires public entities to accrue amounts attributable to losses on their financial statements.

account for and report losses and premiums. This study finds that it will take approximately ten years, until 2005, for all transit systems to comply with governmental accounting standards to the point where transit premiums and losses can be equitably compared and analyzed. Future study in the interim should focus on the *cost impact* of accounting for (and reporting) premiums and losses, since both of these cost elements are subject to pending governmental regulations which will require, among other various provisions, an actuarial basis for loss reporting and financial accrual for both premiums and losses.

3.2 CLAIMS AND LOSSES

Exhibit 3-10 is an overview of the (six) study participants for recent year 1994. The Claims Paid amount represents the total annual dollars paid out by the transit system for claims and litigation settlement for auto/bus vehicular liability, i.e., total auto/bus liability losses for the year.

EXHIBIT 3-10
1994 Indicators for Study Participants

A1

- 236 million riders
- 1,300 buses
- \$1.5 million claims paid



A2

- 51 million riders
- 600 buses
- \$1.3 million claims paid



A3

- 24 million riders
- 500 buses
- \$154 thousand claims paid



B1

- 16 million riders
- 200 buses
- \$1.2 million claims paid



B2

- 10 million riders
- 200 buses
- \$299 thousand claims paid



B3

- 1 million riders
- 30 buses
- \$37 thousand claims paid



Legend

= 10 million riders
= 100 buses
= \$100,000 in claims paid

The study in this section reviewed the typical process for handling auto/bus vehicular liability claims, and then examines losses relative to pertinent legal and accounting provisions, risk management information systems, and safety. Within-group and cross-sample regression is performed in order to assess possible relationships for losses with other operating indicators.

3.2.1 Claims Process

Procedures for accident investigation and claims processing are fairly standard across the transit systems in the sample. Exhibit 3-11 is a diagram of the typical claims process. Following an incident, the operator first notifies the dispatcher of the matter and then completes an accident form which documents the time and circumstances of the incident, including all injuries and detailed passenger seating (if this is possible). The dispatcher next sends a supervisor to the scene, and formal field notes as well as the official accident/incident report are prepared at that time. Measurements and photographs are made in order to perform accident re-construction in case this step is ever necessary. The supervisor's accident report then enters the risk management system, and the accident data is entered into an electronic data base (a risk management information system, or RMIS); the report is filed manually.

Appendix F is a sample Accident/Incident Report, currently used by participant A3.

A claims adjuster next reviews the report and then enters a reserve amount into the RMIS. The adjuster periodically reviews and updates the reserve amount, usually monthly, in order to reflect the accurate potential liability as the claim progresses to settlement. Payments which are made on the claim and amounts which are received either from subrogation¹⁶ or payments from other parties, are applied as loss adjustments to the claim in the RMIS.

Settlement authority for claims is set forth in Resolution by the transit system's Board of Directors. Settlement authority is *normally* granted at the following organizational levels:¹⁷

- Claims adjuster can settle up to \$5,000
- Risk Manager can settle up to \$15,000
- Director of Finance can settle up to \$20,000
- General Manager can settle up to \$25,000
- Board of Directors must settle any claim in excess of \$25,000.

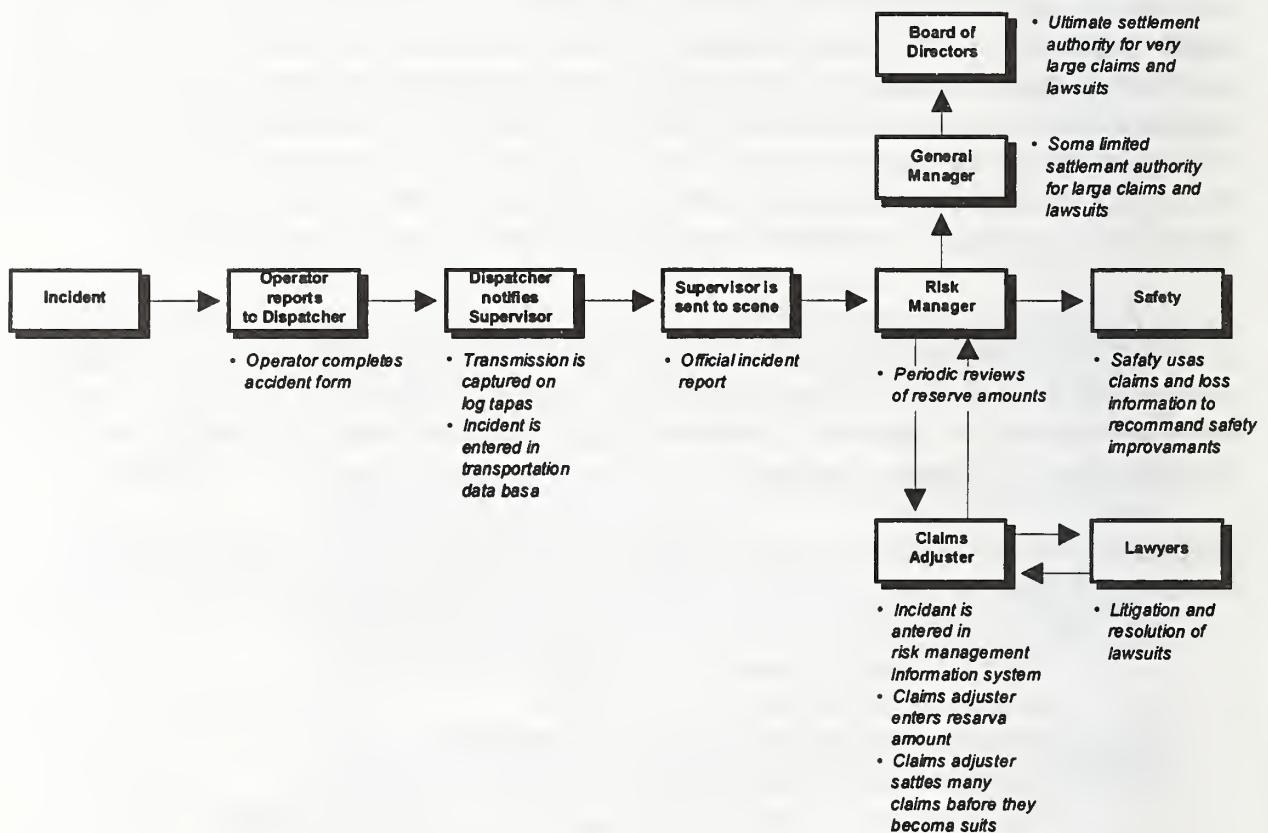
¹⁶ Subrogation payments are amounts received from (various) other liable parties or their agents.

¹⁷ These levels are typical and are provided for illustration purposes only. The Board of Directors in each respective transit system sets unique authority thresholds for claims settlement.

Legal intervention for the transit system is normally required under either of two circumstances:

- The claimant files suit (thereby becoming the plaintiff)
- The transit system believes that the claimant is asking for too much money, or has had excessive medical treatment for a soft tissue injury.

EXHIBIT 3-11
Typical Claims Process for Study Transit Systems



Interviews with agency risk managers revealed that methods and strategies across transit systems were mixed with regard to settlement philosophy. All participants in the sample said that if the agency had liability for the alleged injury, then it is the intent of the agency to settle the claim as quickly and expeditiously as possible. However, agencies which reside in jurisdictions which have some governmental immunity¹⁸ appeared to be, overall, less aggressive in settlement strategy than those agencies which have no statutory provision for

¹⁸ Statutory maximums or governmental immunity include any and all legislated limits which may affect a jurisdiction's civil liability (tort liability). Statutory maximums may include monetary caps on economic and non-compensatory (including punitive) damages, the abolishment of joint and several liability, and comparative fault.

immunity¹⁹. To demonstrate, following are excerpts from interviews with the risk managers for participants B1 (no statutory immunity) and B2 (has favorable statutory limits):

- B1: "If [agency] has no liability for an alleged injury, then we deny the claim and fight the action vigorously. [Agency] does not pay claims on the premise it is cheaper to pay a claim than it is to pay legal fees. Over a period of time if an agency pays claims based on 'it's cheaper to pay than to fight' the agency will have more claims filed against it and thus pay more money in the long run..." "...my position is that if [agency] has no negligence, that unless we can end the case for zero dollars or something less than \$1,000, we go to trial...[agency] would rather pay attorney's fees than have the plaintiff's community think that all they have to do is file a claim and let the case run the course of the system and eventually [agency] will roll over and pay."
- B1, on the main reason (some) agency claims remain open: "Greed."
- B2: "...the dollars which can ultimately be saved after an accident occurs is [related to] settlement of a case as quickly as possible. Risk costs escalate with time...settlements, once liability is established, should be settled rapidly. Attorney involvement on the part of the claimant also escalates costs significantly...the same holds true, settle quickly. The largest single obstacle to settlement are attorneys. They 'work' a case. They will not let a client settle until sufficient time has elapsed to maintain the appearance that their fee was warranted."
- B2, on the main reason (some) agency claims remain open: "Attorney involvement."

3.2.2 Losses

Exhibit 3-12 displays the average amount of claims paid per million passengers for each study group, for the recent year 1994. It is shown that dollars paid for losses per million passengers are significantly greater for the smaller group. This is consistent with the finding²⁰ that very large U.S. transit systems have evidenced a decline in casualty & liability cost over the five-year period 1989-1993, while medium-sized systems have shown a large cost growth in the area of liability for the same period.

¹⁹ This finding is consistent with the observation that, for the study, transit systems with statutory limits are in fact higher in tort liability relative to farebox revenue than transit systems which operate in jurisdictions where there are no legislated caps. This finding appears to contradict Thomas' 1994 observations, reported in this study in section 3.2.2.1 Statutory Maximums.

²⁰ Reference Section 3.1.3 Casualty & Liability Expense Macro Findings.

EXHIBIT 3-12
Average Claims Paid Per Million Passengers
1994

TRANSIT SYSTEM	# PASSENGERS	CLAIMS PAID	STATUTORY MAXIMUM FOR PERSONAL INJURY	INSURANCE	\2	GASB	\3	RMIS	\4
A1	236M	\$1,499,540	None	\$1 to \$5M, excess to \$95M		No		3	
A2	51M	\$1,293,191	\$500K per occurrence, \$200K per person	\$1 to \$500K/p.o., excess to \$5M		Yes		6	
A3	24M	\$ 154,140	\$500K per occurrence, \$250K per person	\$1 to \$500K/p.o.		Yes		7	
Subtotal Study Group A	311M	\$2,946,871							
Average Study Group A	104M	\$ 982,290							
Claims Paid Per Million Passengers, Study Group A		\$ 9,445							
B1	16M	\$1,218,024	None	\$1 to \$1M, excess to \$20M		Yes		9	
B2	10M	\$ 298,781	\$200K per occurrence, \$100K per person	\$1 to \$200K/p.o., excess to \$6.6M		No		7	
B3	1M	\$ 36,795	None	Commercial to \$5M		No		2	
Subtotal Study Group B	27M	\$1,553,600							
Average Study Group B	9M	\$ 517,867							
Claims Paid per Million Passengers, Study Group B		\$ 57,541							
Total All Systems	388M	\$4,500,471							
Average All Systems	56M	\$ 750,079							
Average Claims Paid per Passenger Million		\$ 13,394							

NOTES:

\1 Source: Agency's own report (site visit 8/95).

\2 Vehicular liability insurance

\3 Denotes compliance with Government Accounting Standards Board Statement No. 10.

\4 Consultant's subjective appraisal of the transit system's risk management information system: Scale is 1 to 10, 1 is poor and 10 is best.

Statutory maximums could play a role in losses per million passengers, since two of the participants in the larger study group reside in jurisdictions which are controlled by legislated statutory caps. However, this study also failed to find a low (relative) rate of total claims dollars per farebox revenue²¹, for those transit systems which are covered by statutory caps. The remainder of this section will address the impact of current jurisdictional law, accounting standards, risk management information systems, and the area of safety on transit auto/but vehicular losses.

3.2.2.1 Statutory Maximums

In 1994 Larry Thomas used survey responses from a sample of 40 transit agencies to obtain results which indicated that agencies which reside in jurisdictions having statutory maximums²² on tort recovery appeared to have a significantly lower share of tort liability payments relative to farebox revenue than those agencies which had no such limitations.²³ In his survey, Thomas found the average percent of tort liability to farebox revenue to be 5.67 percent.²⁴

Exhibit 3-13 shows tort liability payments (claims payments) as a percent of farebox revenue for the six participants in this (current) study, for representative year 1993. The average share of tort liability payments was 3.55 percent and is therefore somewhat in the range of Thomas' findings for the larger sample. Regression analysis yields a 0.81 r squared statistic which indicates a strong relationship for tort liability payments and rider fees across the sample. Close examination of Exhibit 3-13, however, reveals that those transit systems which have statutory maximums have higher overall shares of claims payments relative to rider fees than those systems which do not operate with statutory caps. This finding, which is counter to Thomas' finding in the larger sample of 40 transit systems, is mainly due to the large number of smaller claims and settlements in these agencies.

²¹ Reference Section 3.2.2.1 Statutory Maximums.

²² Statutory maximums or governmental immunity include any and all legislated limits which may affect a jurisdiction's civil liability (tort liability). Statutory maximums may include monetary caps on economic and non-compensatory (including punitive) damages, the abolishment of joint and several liability, and comparative fault.

²³ Reference Section 3.3.1 Legal Issues.

²⁴ Thomas, p.4.

EXHIBIT 3-13
Percent Tort Liability to Rider Fees

for FY 1993:

	Rider Fees	Tort Liability Payments (\$)	% of Rider Fees
(1) A1	\$88,797,109	\$1,889,269	2.13%
(2) A2 has Statutory Maximums	\$27,469,000	\$1,440,768	5.25%
(3) A3 has Statutory Maximums	\$8,668,000	\$563,781	6.50%
(4) B1	\$13,285,060	\$666,904	5.02%
(5) B2 has Statutory Maximums	\$4,403,201	\$497,903	11.31%
(6) B3	<u>\$721,366</u>	<u>\$27,913</u>	3.87%
Total All Participants	\$143,343,736	\$5,086,538	3.55%
Average All Participants	\$23,890,623	\$847,756	3.55%
Regression Output:			
Constant	(12,914,317)		
Std Err of Y Est	16,338,973		
R Squared	<u>0.81</u>		
No. of Observations	6		
Degrees of Freedom	4		
X Coefficient(s)	43		
Std Err of Coef.	10		

The Abacus study found that statutory maximums may not fully explain total tort liability or claims payments, therefore, Exhibit 3-14 looks at the incidence of large claims (\$25,000 and greater) versus the number of new claims for the sample, for representative year 1993. The r squared statistic is 0.71, indicating a strong relationship. Findings here show that those transit systems which have statutory maximums have a lower percentage of large claims to new claims, relative to those transit systems which do not have statutory caps. This observation validates Thomas' finding.

The study findings for claims payments and statutory law can be summarized with the dual observation that statutory caps affected the transit systems in the sample by causing a lower incidence of large claims; however, statutory maximums did not appear to lower the percentage of tort liability to rider fees.

EXHIBIT 3-14
Percent Large Claims to Number of New Claims

for 1993:

	<u># of New Claims</u>	<u>#</u>	<u>Claims > \$25K</u>
			<u>% of New Claims</u>
(1) A1	2,524	27	1.07%
(2) A2 has Statutory Maximums	3,203	14	0.44%
(3) A3 has Statutory Maximums	263	2	0.76%
(4) B1	323	5	1.55%
(5) B2 has Statutory Maximums	187	1	0.53%
(6) B3	<u>68</u>	<u>0</u>	0.00%
 Total All Participants	 6,568	 49	 0.75%
 <i>Average All Participants</i>	 1,095	 8	 0.75%
 Regression Output:			
Constant	187		
Std Err of Y Est	836		
R Squared	<u>0.71</u>		
No. of Observations	6		
Degrees of Freedom	4		
 X Coefficient(s)	 111		
Std Err of Coef.	35		

3.2.2.2 Accounting Standards

As self-insurance programs have proliferated among public entities, it has become apparent that there is a large measure of inconsistency in the way in which these programs recognize and account for their claims cost. This is the result of the fact that there have been several different sources of guidance available, none of which has been completely relevant to public entity self-insurance programs.

According to the GASB, the most relevant source of guidance on the subject is Financial Accounting Standards Board Statement No. 60²⁵, Accounting and Reporting by Insurance Enterprises, which states that claims cost, including claim adjustment expenses and estimates of cost for claims relating to covered events that have occurred but have not been

²⁵ FASB Statement No. 60, Accounting and Reporting by Insurance Enterprises. Since 1973, the Financial Accounting Standards Board (FASB) has issued recommendations (statements) with the purpose of making the accounting process more responsive to those who rely on financial statements. FASB Statement No. 60 states that claims cost, including claim adjustment expenses and estimates of cost for claims relating to covered events that have occurred but have not been reported, should be recognized in the period in which the event that triggers coverage under the policy occurs.

reported, should be recognized in the period in which the event that triggers coverage under the policy occurs. A liability for unpaid claims cost, including all loss adjustment expenses, should be accrued at the time the self-insured events occur. This liability should include an allowance for incurred but not reported claims. It may be discounted for investment income at an appropriate rate of return, provided the discounting is disclosed and the investment income is retained in the self-insurance fund. The regulations which detail the way in which this must be done are outlined in GASB 10²⁶ which establishes accounting and financial reporting standards for risk financing and insurance related activities of state and local governmental entities. These regulations will be required to be applied to transit loss accounting beginning in 1995.

Historically, transit systems have treated their liabilities on a "pay as you go" or cash flow basis. That is, liability on a claim made today, but expected to be two years before settlement, would be recognized in the year that the payout was made. This practice has led to an overstating of the financial condition of public entities and public transit systems across the nation. Accounting rules are the prime drivers for loss data collection, and so the phase-in of GASB 10 will have a large impact on the financial statements of transit systems which have been operating their self-insurance systems on a cash flow basis. GASB 10 will require actuarial or "policy year" treatment of losses, and will pressure agencies to adopt standardized definitions of and methods for claims and loss accounting.

The six transit systems in the sample were equally split in the status of their respective GASB 10 compliance. This finding is not surprising in light of the fact that most transit systems in the sample were preparing for their 1995 audit at the time of the site visit. Exhibit 3-12²⁷ indicates each sample participant's compliance status with GASB 10. This information was obtained by using the transit system's own report of cash or actuarial basis claims accounting. Other input included the status of agency efforts to perform *loss development* - the cost growth in total claims due to actual subsequent evaluation, including new claims assessment, at a later date - and *loss trending* - the cost growth in claims due to inflation.

3.2.2.3 Risk Management Information System(s)

For all transit systems across the sample, risk managers and agency staff (risk, safety, and finance) expressed degrees of dissatisfaction with the limitations of their current RMIS. The site visits confirmed that each of the (five) self-insured transit systems in the sample was utilizing an electronic data base to track claims²⁸; participant B3, which used a commercial insurance carrier for risk financing and third party claims administration, did not own or use an in-house RMIS.

²⁶ GASB 10 establishes accounting and financial reporting standards for risk financing and insurance related activities of state and local governmental entities. Also reference Section 3.1.2.1 Reported Premiums and Losses.

²⁷ Reference Section 3.2.2 Losses.

²⁸ Study participant A3 is currently in the process of procuring (designing and purchasing) a new Risk Management Information System.

The study finds that the RMIS which are currently in use are "homegrown"²⁹, fragmented and outdated, and are mainly patched-together hybrid programs consisting of older mainframe systems and files, and newer spreadsheet capability. This uneven situation is apparently caused by the lack of industry standards in this increasingly visible and cost-intensive area of liability analysis.

Site visits found poor connectivity with RMIS and other in-house electronic data, such as the transportation department log of incidents and the financial general ledger. A common complaint was that several data sources had to be tapped in order to evaluate complete claims and loss data which were required for the study site survey. Monthly/annual accounting entries required manual work. Safety analysis was difficult and tenuous since loss information was not linked to transportation detail regarding cause and preventability of accidents. Only five of the six study participants were able to respond to the queries below:

- How many open *claims* existed prior to September 30, 1995? *Reserves*?
- How many open *lawsuits* existed through the same period? *Reserves*?
- How much has been *paid out for claims* for the FY prior to September 30, 1995?
- How much has been *paid for lawsuit settlements and judgments* through the same period?

The responses for sites A1, A2, A3, B1, and B3 are contained in Exhibit 3-15.

The study finds that the self-insured transit systems in the sample all do an effective job of ad hoc, manual reporting from the RMIS. The RMIS is a customized source of information, with data retrievable by experienced staff. A typical monthly report includes the following incident information:

- Total open cases and reserves
- Number of cases opened and closed for the month
- Total paid for the month and year-to-date.

²⁹ Shadow system developed by agency staff or a software consultant, by patching sections of existing systems and data banks.

EXHIBIT 3-15
Claims and Lawsuits Pending for Auto/Bus Vehicular Liability

							Total Claims & Lawsuits per million Passengers
	# Passengers (millions)	# Claims Outstanding	Reserves	# Lawsuits Outstanding	Reserves.	Average Claims Outstanding	Average Lawsuits Outstanding
A1	242	922	\$2,749,549	322	\$9,150,130	\$2,982	\$28,417
A2	53	368	\$1,184,166	16	\$168,275	\$3,218	\$10,517
A3 ¹¹	25	211	\$1,645,468	15	\$915,064	\$7,798	\$61,004
Subtotal Study Group A	320	1501	\$5,579,183	353	\$10,233,469	\$13,998	\$99,938
							\$177,111
Average Study Group A	107	500	\$1,859,728	118	\$3,411,156	\$4,666	\$33,313
							\$59,037
B1	15	193	\$570,088	47	\$824,541	\$2,954	\$17,543
B2				Data is not currently available			
B3	1	15	\$120,119	—	—	\$8,008	—
Subtotal Study Group B	16	208	\$690,207	47	\$824,541	\$10,962	\$17,543
Average Study Group B	8	104	\$345,104	24	\$412,271	\$5,481	\$8,772
Total All Agencies	336	1709	\$6,269,390	400	\$11,058,010	\$24,960	\$117,481
Average All Agencies ¹²	67	342	\$1,253,878	80	\$2,211,602	\$4,992	\$23,496
							\$390,206
							\$78,041

¹¹ Status at 10/31/95

¹² Since data is incomplete, the average amounts reported for "All Agencies" is limited to the (five) agencies which have reported data.

Frequently a narrative update on any large or notable claims accompanies the monthly risk management loss reports. These reports are distributed to the general manager and Board of Directors.

Appendix G is an example of a graphic incident report from the risk management group in study participant A3.

Study participant B3 (not self-insured) does not import or distribute any periodic claims or incident information to internal management. Transportation statistics regarding accident type are provided by the third-party administrator in monthly loss runs, but this information, with the exception of the very large claims, generally remains unexamined and uncommunicated within the agency.

3.2.2.4 Safety

Safety and Risk Management functions are disjointed in some of the six agencies in the sample, and do not share common goals and uniform procedures. This finding is underscored by the observation in Section 2.2.2.3 that RMIS are not linked to the transportation data base, which is the primary source of incident data when the dispatcher makes a log entry documenting incident facts such as weather conditions and operator identification.

In the study, all participants in study group A (the larger systems) had merged the safety and risk management functions under one manager at the time of the site visit; study group B (smaller systems) remained de-centralized. It is notable that 1995 losses are significantly higher per million passengers for the smaller group (see Exhibit 3-15³⁰), although causality due to this factor cannot be determined from the limited sample of six transit systems.

Interviews with risk managers during the site visits revealed diverging thoughts on the safety function:

- "The one recommendation I would have for [agency] is that Safety and Risk Management should work closer together. Sometimes Safety implements programs, studies or investigations without advising Risk Management or without coordination, and as a result we sometimes overlap on tasks we are doing. As a Risk Manager I am convinced that Safety should be a part of Risk Management rather than some other department."
- "... programs after the fact do not save the dollars that a low accident rate can save. Driver attitudes and adherence to safety/driving techniques in which they have been trained is the key. Drivers talking to passengers and other distractions cause accidents regardless of whether it was preventable or not."

³⁰ Reference Section 3.2.2.3 Risk Information Systems.

Operations functions are not normally receptive to retraining drivers due to the costs involved."

The study found that transit systems which had well-managed programs of preventative maintenance, including non-routine procedures such as engine de-greasing and tire re-treading, were the same systems that made a consistent effort to peruse the RMIS and transportation information in order to discover liability problems and remedy them. This observation was true for all systems across the sample, independent of whether or not the safety and risk management departments were consolidated.

3.2.3 Study Recommendations

Claims procedure and loss experience are major issues which have been examined in this study of six participating transit systems. After a careful review of typical claims processes and factors affecting losses, the following recommendations are provided.

3.2.3.1 Record-keeping and Reporting

To bring about much needed improvements in claims record-keeping, data retrieval and reporting, the study recommends the following actions:

- (1) Implement an automated RMIS which is linked to the transportation data log and the (finance) general ledger. The RMIS, in addition to being the repository of claims administration information, will perform loss development and reserve analysis, and will have the capability to be queried by mode, and by claim or lawsuit. Monthly accounting entries will be output in report format.
- (2) Use RMIS to produce monthly loss triangles, in order to comply with GASB 10³¹ which establishes accounting and financial reporting standards for risk financing and insurance related activities of state and local government entities. Loss triangles should capture paid losses, reserves, and losses incurred; and the number of claims and lawsuits which are opened and closed in each month/year.
- (3) Agency financial analysis for risk will include the ability to perform this algorithm:

$$\text{Beginning of FY Liability} + \text{Current Year Claims and} \\ \text{Changes in Estimates} - \text{Claims Payments} = \text{FY End.}$$

³¹ Reference Section 3.1.2.1 Reported Premiums and Losses

3.2.3.2. Safety Improvements

To enhance current efforts to achieve safety improvements in transit operations, the study recommends these actions:

- (1) Set target goals for liability (e.g., the average *expected cost of an incident* in the month of April will be \$550; the *target number of new claims* in the month of May is 25) and then formally review them and recognize their attainment. Over time, realistic standards will emerge and the presence of a periodic objective will motivate staff to discover and take responsibility for improvements.
- (2) For losses which carry reserves of at least \$25,000, provide special dispositional treatment including general manager and Board of Directors briefings and settlement sign-off. Large losses should always come to the attention of the Board of Directors, who are typically elected representatives from the service-area community and who may offer valuable insight into future or potential exposures.
- (3) Place the Safety function in Risk Management, and assign an overall manager for both. The primary responsibility of Safety should be preventative maintenance and accident analysis; Risk Management should handle risk financing and claims administration. Both functions should be assigned clearly targeted annual objectives, and, in order to bring about real improvements in the organization, salary incentives should be premised on meeting these objectives. The manager for Safety and Risk can be Finance, Planning, or Administration.
- (4) Investigate "virtual" training programs for bus operators, which use customized software and multimedia computers to simulate traffic situations, weather conditions, and mechanical malfunctions. Benefits include the accident-prevention value of screening out applicants who have poor reaction time and eye/hand coordination.

3.2.4 Suggestions for Further Study

The major area requiring additional study is GASB 10 compliance. This is related to implementation of RIMS, since reporting will be premised on the accounting standards for loss accounting. Future study shall investigate how efficiently and how effectively transit systems are able to comply with GASB 10. Special attention should be given to those transit systems which use third party administrators for claims handling. Also subject to investigation is the related question of how transit systems' Federal reporting of casualty & liability expense (object class 506) will be impacted by pending RMIS enhancements and GASB 10 compliance.

Optimally, transit systems will standardize casualty & liability reporting when they achieve compliance with GASB. At that point, study of the relative "Cost of Risk" for public transit will begin to have real value, since agencies will for the first time be on the same comparative reporting basis.

3.3 RISK FINANCING

Risk financing can either take the form of payments for premiums (commercial insurance) or for losses (self-insurance, including commercial insurance deductibles). The study data in Exhibit 3-16 indicate a trend to higher premium payments relative to losses, for those transit systems which operate in jurisdictions which do not have statutory maximums for tort liability³². This finding is observed across all five transit systems reporting cost breakdown for 1991-1994 casualty & liability expense, regardless of the size of the system.

Risk managers in the study also reported a growing trend (nationally) to self-insurance. Five of the six study participants were self-insured (Exhibit 3-16) with varying levels of excess coverage; the only transit system in the study which carries primary commercial insurance was B3, the smallest agency in the study sample.

This section examines specific transit system experience with risk financing, through the two mediums of self insurance and commercial insurance.

EXHIBIT 3-16
Risk Financing Summary, 1991-1994

	Statutory Maximums	Self-Insured	Percent Premiums				Percent Losses				Total Casualty and Liability Expense
			1991	1992	1993	1994	1991	1992	1993	1994	
A2	Yes	Yes	24%	18%	19%	13%	76%	82%	81%	87%	100%
A3	Yes	Yes	12%	6%	6%	7%	88%	94%	94%	93%	100%
B1	No	Yes	73%	49%	29%	50%	27%	51%	78%	50%	100%
B2	Yes	Yes	12%	12%	10%	12%	88%	88%	90%	88%	100%
B3	No	No	100%	100%	100%	100%	---	---	---	---	100%

³² Study participant A1 (no statutory caps) is unable to report breakout of historical casualty & liability expense due to the inadequacy of the automated RMIS.

3.3.1 Self Insurance

The study found that self-insured transit systems are mainly guided by actuarial studies in setting their reserve policy and in trending their losses. For all agencies in the study except B2³³ and B3, risk managers used actuarial studies to analyze composite exposure and to set reserves.

In most liability programs, total case reserves consistently understate the ultimate total cost of claims. Though most settle for less than the final reserve, these decreases are generally offset by larger increases in case reserves for other claims for which new information is emerging. The result is that the total estimated costs for claims incurred in a year are revised upward over time. This is a normal process called "loss development," and the study found that all of the self-insured transit systems in the sample perform loss development on a monthly basis.

Loss development observed in prior periods is used to predict future loss development. For example, if average losses at 48 months after the beginning of the accident year have been 225 percent of losses at 12 months, then loss development from 12 to 48 months for current and future years is predicted to be 125 percent.

Actuarial studies generally recommend funding the liability reserve to the 75 percent to 85 percent confidence level; a 70 percent confidence level is considered marginally acceptable, and 90 percent funding is considered conservative. Probabilistic estimating is used to determine confidence levels based on composite exposure³⁴. It is beyond the scope of this study to verify liability funding levels vis a vis recent actuarial recommendations (where these exist). Actuarial recommendations observed in the study are generally based on the following broad information:

- Historical loss development
- Historical frequency of claims
- Current information about the size and activities (operations and investments) of the transit system
- Current case reserves
- Information about the largest claims.

³³ Study participant B2 is currently in process of conducting an actuarial study (their first study).

³⁴ *Composite exposure* is normally measured in an actuarial study and is subsequently used in the assessment of the amount of risk present in the reporting entity. The normal actuarial formula for composite exposure is:

(15% of revenue miles for each mode) + (15% of gross agency revenue) + (20% of total agency payroll) + (20% of the number of employees)

3.3.2 Commercial Insurance

Only study participant B3 carried primary commercial insurance, the others were self-insured with varying limits of commercial excess coverage. Exhibit 3-17 shows the limits of current coverage for each of the transit systems in the study.

EXHIBIT 3-17 Limits of Current Liability Coverage for Vehicle Liability

TRANSIT SYSTEM	PRIMARY COVERAGE	SELF-INSURED RETENTION (SIR)	EXCESS
A1	Self-insured, no statutory caps	\$5 million	\$95 million
A2	Self-insured to statutory caps	\$1 million	\$5 million
A3	Self-insured to statutory caps	—	—
B1	Self-insured, no statutory caps	\$1 million	\$20 million
B2	Self-insured to statutory caps	\$500 thousand	\$6.6 million
B3	\$5 million	—	—

Premiums for study participant B3 were especially germane to the review of premium cost growth over time, since coverage here is for primary (first-dollar) insurance and the coverage limits have been constant over the period. Below is a summary of historical cost for B3 commercial premiums, for personal liability and property damage coverage:

B3 Personal Liability and Property Damage Premiums

1991	\$122,177
1992	\$127,638
1993	\$138,998
1994	\$114,730
1995	\$134,243

Both the cost spike in 1993 and in 1995 were due to two events:

- More units (buses) were reported for coverage in those years
- Since the policy is experience-rated, previous years' losses were considered in arriving at the premium cost. B3 losses were unusually heavy in 1991, and the broker explained that this triggered an increase in 1993. The 1995 increase was less clear, and one significant finding of the study is that risk management staff at this (very small) agency were unaware of the cause of this marked cost increase.

In the site interviews, risk managers reported no recent problems with obtaining insurance coverage:

- "Each renewal there has been consistent pressure from insurance carriers in support of premium increases....There has not been difficulty in obtaining coverage or adequate limits because the market conditions have been favorable to the insured. Carriers have been promoting higher deductibles/self-insured retentions at each renewal. In the carrier's way of thinking, a higher deductible...gives the insured a bigger "vested interest" in keeping losses to a minimum and forming pro-active safety programs."
- "During the last three-year period [agency] has been self-insured and has not purchased insurance for auto/bus liability, other than for the vanpool program which is a small premium. [Agency] has this year solicited bids for auto/bus liability insurance to evaluate the current liability program, but has not yet received the results."
- "My experience in purchasing insurance over the last three years has been very positive. We have continually been able to purchase broader coverage for less money....[Agency's] insurance premiums have decreased each year over the last five years. There has been no difficulty in placing [agency's] insurance program."
- "As a self-insured entity for bus vehicle liability, we purchase excess coverage insurance. This has been put out to bid for the last three years....We have had no unusual or difficult issues to deal with in the placement of this coverage."

Appendix H includes some sample terms (specifications) of commercial coverage, for several transit systems in the study.

3.3.3 Study Recommendations

Due to the finding that most large and medium-sized transit systems are self-insured (at least those which are included in this study), recommendations are for continued actuarial studies to be performed annually or not less than every three years; and to use a forum such as American Public Transit Association to communicate indices of composite exposure such as loss development factors and severity trend factors, which are determined through the detailed actuarial studies. The comparison of such analyses is important due to the extent of self-insuring agencies. Such information is no more sensitive than source and level of revenues, which is already widely disclosed. Liability benchmarking will also facilitate national collaboration by transit, in preparation for compliance with GASB 10 and future government accounting standards in the increasingly active area of risk financing.

3.3.4 Suggestions for Further Study

For risk financing, three areas for further study emerge:

- Assess the degree of compliance with actuarial recommendations for self-insured transit systems, i.e., compare liability reserves actual funding with recommended confidence levels.
- Review the cost of excess coverage for self-insureds. The study found that these policies are generally not monitored as closely as in-house reserves and deductible retentions.
- Review the cost-effectiveness of premium dollars which are spent for first-dollar coverage, for commercially insured transit systems. Benchmark premium ratings and policy services. Smaller transit systems rely heavily on commercial coverage, and cost-benefit analysis is needed to demonstrate the relative efficiency of these dollars.

4.0 SUMMARY AND CONCLUSIONS

The purpose of this study is to review casualty & liability expense in the specific context of Federal reporting (object class 506), and to examine contemporary transit loss experience and risk financing.

4.1 HIGHLIGHTS OF THE STUDY FINDINGS

- The study finds that the larger transit systems have lower casualty & liability expense, relative to millions of passengers, than do the smaller systems. The same effect is observed for "Claims Paid" and "Total Current Reserves for Claims and Lawsuits," i.e., the larger systems in the study have lower expense per million passengers.

(1) Losses are observed in the sample to be high relative to premiums, for those agencies where there are statutory maximums or jurisdictional legislated caps for tort liability.

(2) In a cross-sample analysis, the presence of statutory limits is found to reduce the number of large claims (claims greater than \$25,000) for the study sample, but statutory limits do not show an effect of reducing total tort liability payments relative to rider fees.

(3) For the period 1989-1993, total casualty & liability expense has decreased by 24 percent for the largest U.S. public transit systems, and has increased by 50 percent for mid-sized systems.

(4) Finally, below are quotes from two risk managers who participated in the study. Their responses here are directed to the query, "Please provide your recommendation(s) for improvement to any element of your agency's safety or risk management programs."

"We should do more in-depth analysis of risk data and associated cost to reduce hazards. More coordination between [the] Safety and the Operating Department[s] will create a better understanding of the cost of identified hazards and risks, and improved accident investigation."

"The biggest area (for improvement) would be in utilizing information systems in tracking data for better evaluation. This would allow for better directed programs and the ability to evaluate them."

These comments are presented in closing to point up the current needs within public transit for effective and timely data handling. Networked RMIS, electronic records management, and the efficient retrieval of specific and varied liability information are all needed. The area of loss analysis and risk financing is continually becoming more complex, increasingly visible, and subject to widespread scrutiny from both the public and private

sectors. Transit additionally bears the dual responsibility for not only protecting itself through risk financing, but also for managing the Safety function in a proactive way which results in quantifiable improvement for the benefit of the riding public.

The six transit agencies in the study sample are currently staffed with capable, motivated risk managers. GASB 10 and GASB 11 should, by 2000 or sooner, serve to promote increased uniformity for transit liability accounting. What is presently lacking is an effective tool to manage the increasingly complex informational needs of risk managers, as well as cognizant governmental authorities at the Federal, State, and local level. To the extent that an automated, integrated, and standardized RMIS can be developed and used by risk managers, *information* (not simply data) can be *managed* (not simply maintained). Most critically, the managed information can then be effectively used to achieve transit risk financing objectives, and to identify areas of exposure for system safety.

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APPENDIX A
PERFORMANCE INDICATOR TABLES



TASK 1 CANDIDATE SITES: KEY CHARACTERISTICS OF INDIVIDUAL BUS SYSTEMS

as of: AVERAGE 1991, 1992, 1993 Section 15 Report Year

<u>Chart 1: OPERATING CHARACTERISTICS</u>							
<u>AVERAGE 1991, 1992, 1993</u>							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fleet Size (Class)	Vehicles In Service	Mode: Bus Only? for 1993	Average Fleet Age In Years	Directional Route Miles Mixed ROW	Population 000's	Federal Operating Funds % IS	Incident Count 16
1 Transit System A-1	ME						
2 Transit System A-2	NW						
3 Transit System A-3	MV						
<i>GROUP A Average</i>		B	792	No	9	1,929	1,689
4 Transit System B-1	W						
5 Transit System B-2	S						
6 Transit System B-3	SE						
<i>GROUP B Average</i>		D	127	Yes	9	859	615
<i>Combined Average: n=6</i>		C	459		8.8	1,399	1,152
							12.4%
							358
							23
							17
							18
							19

as of: AVERAGE 1991, 1992, 1993 Section 15 Report Year						
Chart 2: PERFORMANCE CHARACTERISTICS		AVERAGE 1991, 1992, 1993		(15) Unlinked Trips / Vehicle Rev Miles 11		
(10)	(11) Annual Passenger Miles 000's	(12) Annual Vehicle Rev Miles 000's	(13) Annual Unlinked Trips 000's	(14) C&L (\$00's \$000's)	(15) C&L / Operating Expense 18	(16) Op Exp / Vehicle Rev Miles 19
1 Transit System A-1	ME					
2 Transit System A-2	NW					
3 Transit System A-3	MW					
4 Transit System B-1	GROUP A Average	142,914	288,252	25,702	82,675	2,857
5 Transit System B-2	W					
6 Transit System B-3	S					
	SE					
	GROUP B Average	19,781	36,416	4,882	8,826	894
	Combined Average: n=6	\$81,348	162,334	15,292	45,750	\$1,876
						2%
						\$5.32
						\$0.50
						2.9%

* includes Motor Bus, Trolleybus, Demand Response (including para transit and purchased transportation) and Vanpool modes.

TASK 1 CANDIDATE SITES: KEY CHARACTERISTICS OF INDIVIDUAL BUS SYSTEMS *

as of: AVERAGE ALL YEARS / ALL AGENCIES

<i>Chart 1: OPERATING CHARACTERISTICS</i>		<i>(9) Incident Ratio</i>						
	<i>(1) Fleet Size (Class)</i>	<i>(2) Vehicles In Service</i>	<i>(3) Mode: Bus Only? for 1993</i>	<i>(4) Average Fleet Age in Years</i>	<i>(5) Directional Route Miles Mixed ROW</i>	<i>(6) Population 000's</i>	<i>(7) Federal Operating Funds %</i>	<i>(8) Incident Count</i>
<i>AVERAGE ALL YRS / ALL AGENCIES</i>								
1	1991 AVG all Transit Agencies, n=6	B	449	n/a	9.3	1,381	1,152	12.3%
2	1992 AVG all Transit Agencies, n=6	B	459	n/a	8.7	1,365	1,152	11.7%
3	1993 AVG all Transit Agencies, n=6	B	470	n/a	8.3	1,451	1,152	13.0%
<i>Combined Average: n=3</i>		C	459	n/a	8.8	1,399	1,152	12.4%
								358
								23

as of: AVERAGE ALL YEARS / ALL AGENCIES

<i>Chart 2: PERFORMANCE CHARACTERISTICS</i>		<i>(18) Unlimited Trips / Vehicle Rev Miles</i>						
	<i>(11) Annual Passenger Miles 000's</i>	<i>(12) Annual Vehicle Rev Miles 000's</i>	<i>(13) Annual Unlimited Trips 000's</i>	<i>(14) C&L (506) Expense \$000's</i>	<i>(15) C&L / Operating Expense %</i>	<i>(16) Op Exp / Vehicle Rev Miles</i>	<i>(17) Op Exp / Passenger Miles</i>	<i>(18) Unlimited Trips / Vehicle Rev Miles</i>
<i>AVERAGE ALL YRS / ALL AGENCIES</i>								
1	1991 AVG all Transit Agencies, n=6	\$79,166	172,033	15,206	47,154	\$2,527	3%	\$0.46
2	1992 AVG all Transit Agencies, n=6	81,098	159,101	15,215	45,711	1,416	2%	\$5.33
3	1993 AVG all Transit Agencies, n=6	83,779	155,868	15,455	44,386	1,684	2%	\$5.42
<i>Combined Average: n=3</i>		\$81,348	162,334	15,292	45,750	\$1,876	2%	\$5.32
								\$0.50
								2.99

* includes Motor Bus, Trolleybus, Demand Response (including paratransit and purchased transportation) and Vanpool modes.

NOTES to Key Characteristics

- \1 Fleet Size Classes: "A" = 1,000 and over; "B" = 500-999; "C" = 200-499; "D" = 50-199; "E" = less than 50 vehicles.
- \2 Vehicles in Service includes Motor Bus, Trolleybus, Demand Response and Vanpool modes.
- \3 Motor Bus fleet classes, Section 15: "BA" = > 35 seats; "BB" = 25-35 seats; "BC" = < 25 seats.
- \4 Population is for Service Area, not UZA census statistics.
- \5 Percent of Transit System (all modes) Section 9 assistance.
- \6 Incident Count is the section 15 reported Collisions; excludes non-collisions and station incidents.
- \7 Incident Ratio is the number of incidents (col 8) per million revenue miles (col 12).
- \8 Casualty & Liability (col 14) expense is expressed as a percent of operating expense (col 10).
- \9 Operating Expense (col 10) / Vehicle Revenue Miles (col 12) is an indicator of Service Efficiency. Lower is better.
- \10 Operating Expense (col 10) / Passenger Miles (col 11) is an indicator of Cost Effectiveness. Lower is better.
- \11 Unlinked Trips (col 13) / Vehicle Revenue Miles (col 12) is an indicator of Service Effectiveness. Higher is better.



APPENDIX B
SURVEY QUESTIONNAIRE



Abacus Technology Corporation
Site Survey: AUTO / BUS LIABILITY EXPENSE and CLAIMS
June, 1995

1. Transit system name: _____

2. Contact: _____ Title: _____

Phone: () _____

Title: _____

3. Date this form was completed: _____ / _____ / _____

MANAGEMENT

4. Please indicate which governmental or private entity: a) retains title to (owns) the building and equipment; and b) manages daily operations for the transit system --

- . State (identify department)
- . Transit Authority:
 - Municipal (identify)
 - Regional (identify)
- . Contractor (identify)

Owns Bldg/Equipment	Manages Daily Operations

5. The system General Manager reports to and receives direction from:

- . State (identify department and individual)
- . City (identify department and individual)
- . Board (identify)
- . Other (identify)

6. Where in your transit organization is the Risk Management function located?

Please identify RM immediate supervisor.

- . General Manager _____
- . Finance _____
- . Legal _____
- . Human Resources _____
- . Risk Management Department _____
- . Contractor: _____

7. Please provide and attach a current ORG CHART for the transit system. Please indicate any known, upcoming structural changes to the current transit organization.

8. Please provide and attach current **JOB DESCRIPTIONS** for the following functions. Include staff size and current operating budget(s). Include name and phone number of incumbent.

Name _____ Phone No _____

- . Risk Manager
- . Claims Manager
- . Safety Manager

Which department has primary oversight for accident investigation?

DTFT60-94-C-41010
OTAS/FTA/DOT

Abacus Technology Corporation
5454 Wisconsin Avenue, Suite 1100
Chevy Chase, Maryland 20815

For HELP in completing this survey, please call Victoria Chaney: 1-800-225-2135

OPERATIONS

9. Please provide RIDERSHIP and PAYROLL information for the period 1991 - 1995. 1994 is preliminary (p) data; use budgeted or estimated amounts for 1995.

Please express amounts in thousands

	1991	1992	1993	1994 (p)	1995 (est)
a) # Riders					
. Actual					
. Plan					
b) Gross transit agency payroll					
. Actual					
. Budget					

\1 Report ridership for Motor Bus, Demand Response, Trolleybus and Vanpool combined modes only.

10. Type of Service (current):

- . Fixed route
- . Demand response (include paratransit)
- . Charter (include all purchased transportation)
- . Other (specify: _____)

Total

Approximate %
Revenue Miles

100%

11. Type of Vehicles (current):

- . Motor bus (specify primary manufacturer)
- . Trolley bus
- . Vanpool
- . Special paratransit
- . Other (specify: _____)

Total

100%

12. Is your transit agency supported by dedicated tax revenue? If so, please describe.

13. Please describe the present status of your bus system's efforts to comply with the Americans with Disabilities Act of 1990. Mention dedicated paratransit vehicles and modifications to standard buses. If applicable, give % fleet equipped with lifts, and # low-floor buses in use or on order.

FINANCE

14. Please describe your accounting fiscal year: _____ / _____
month / day to _____ / _____
month / day

15. General ledger:

. Software _____
. Platform _____
(mainframe, PC, LAN/WAN)

16. Financial auditor: _____

17. Last year for which audited financial statements are available: 19_____*

*please attach a copy of the audited financial statements

18. Last year for which indirect rates are approved: 19_____

19. Does your transit agency have a disclosure statement on file with a cognizant governmental entity?

YES* _____ NO _____ If YES, which entity? _____

*please attach a copy of the current disclosure statement

20. For your transit agency, one FTE (full-time equivalent) = _____ hours

21. Please identify major accounting system reports and indicate their frequency of distribution.

List functional summaries (departmental or divisional reports); cost element reports (labor, travel, etc); and cost allocation and rate computation reports, if applicable.

	Daily	2 Weeks	Monthly	Quarterly	Annual
R1:					
comment:					
R2:					
comment:					
R3:					
comment:					
R4:					
comment:					
R5:					
comment:					

Which report(s) is/are most useful for your purposes? R _____ R _____

Why?

22. Does your transit system have a current:

	YES	NO
. Master Plan		
. Strategic Plan		
. Budget *		

* As of the last fiscal year for which audited records are available, please provide --

for 19_____:	Please express amounts in thousands	Budget	Actual	Variance
. Total indemnity expense (insurance premiums)				
. Uninsured losses paid				
. Claims administration expense				
. Claims litigation expense				
. Risk Management department / RMIS				
. Safety Management department / loss control programs				
<i>Total Cost of Risk before allocation(s)</i>	\$	\$	\$	

INSURANCE

23. Please describe your transit system's current and recent experience obtaining auto/bus vehicle liability insurance. Mention coverage availability and policy renewals. Please comment if possible on your perception of the current "insurance cycle." _____

24. Please provide your transit system's total current limits of coverage. Show coverage deductible(s) as a credit (-). Please total each column. Do not identify coverage provider(s) or premium payments in this section.

		1991	1992	1993	1994	1995
11	. Vehicle Liability (+)					
	Deductible (-)					
	SIR (+)					
12	. Vehicle Physical Damage (+)					
	Deductible (-)					
	SIR (+)					
	. Officers Liability (+)					
	Deductible (-)					
	SIR (+)					
	. General Liability (+)					
	Deductible (-)					
	SIR (+)					
	. Workers' Compensation (+)					
	Deductible (-)					
	SIR (+)					
	. Other coverage(s) (+)					
	Deductible (-)					
	SIR (+)					
	Total outside coverage (+)					
	Total deductibles (-)					
	Total SIRs (+)					

11 Bodily injury and property damage liability, no-fault, uninsured motorist and medical payments.

12 Collision and comprehensive coverage.

25. Please describe your transit system's CURRENT limits of coverage for VEHICLE LIABILITY insurance. Use any and all categories which may apply. Please identify all carriers.

Total Vehicle Liability coverage: \$ _____ for 19_____ millions	Bodily Injury	Property Damage	No-Fault	Uninsured Motorist	Medical Payments
. Commercial insurance:					
. Commercial insurance:					
. Commercial insurance:					
. Pool:					
. Excess insurer:					
. Captive:					
. State fund:					
. Self-insurance retention and deductibles:					
. Other insurer (specify):					

CASUALTY & LIABILITY EXPENSE

26. Within Section 15 reporting standards, Casualty & Liability expense is classified as Federal object code 506. Please explain how your transit system records and reports Casualty & Liability expense:

a) Are premium payments in Federal account 506 accrued to the Section 15 reporting year? YES NO
Please give a detailed example. Mention how plan year and fiscal year are affected, if applicable.

b) Are current payouts for prior-year losses incurred applied to the Section 15 reporting year? YES NO
Please give a detailed example. Mention how policy year and claim year are affected, if applicable.

27. Please provide actual amounts for your transit system Casualty & Liability expense. Totals should agree with published Section 15 annual data, account 506.

	1991	1992	1993	1994 (p)	1995 (est)
. Premiums for insurance					
. Payouts for un-insured loss					
. Payouts for insured loss					
. Provision for un-insured					
. Loss adjustments					
v . Other (specify)					
Total reported expense, 506	\$	\$	\$	\$	\$

11 Is this reserve actually funded? Y N Or only carried as a liability? Y N

12 Include recoveries from plaintiffs and third parties.

13 Include any allocations for general management, legal services, medical services, expert witness, claims adjusting, safety programs and any other direct or allocated cost elements which your transit system includes in Federal class 506. Please specify basis for allocation(s).

28. a) Is Casualty & Liability expense a part of your transit system's G&A pool? YES NO

b) Is any part of Casualty & Liability allocated to other pools or service centers? YES NO

Please explain basis
for allocation to
pools and svc centers: _____

29. Who within the transit system has sign-off authority (*) for premium vouchers (payments to insurance co.)?

Please use numbers to indicate order of sign-off (1 = first signer, etc):

GM	<input type="text"/>	RISK MGR	<input type="text"/>	OTHER: _____	<input type="text"/>
CFO	<input type="text"/>	OPS MGR	<input type="text"/>	OTHER: _____	<input type="text"/>
LEGAL	<input type="text"/>	HR MGR	<input type="text"/>	OTHER: _____	<input type="text"/>

* i.e., show whose signature must appear on the source document before Accounts Payable will process.

ACCIDENTS

30. Did your transit system experience a fatal auto/bus occurrence during:

	Yes	No
1991		
1992		
1993		
1994		
1995		

If YES, please describe the incident(s):

31. Please give the most frequent collision type(s) for auto/bus. Show % for the top two.

Head-on
Side-swipe
Broadside
Rear-end

	1991	1992	1993	1994	1995 (p)
Head-on					
Side-swipe					
Broadside					
Rear-end					

32. Please give the most frequent cause of auto/bus collision for your transit system. Show % for the top two most frequent causes.

Weather (skidding etc)
Operator error
Other driver error
Mechanical failure
Undetermined
Other: _____

	1991	1992	1993	1994	1995 (p)
Weather (skidding etc)					
Operator error					
Other driver error					
Mechanical failure					
Undetermined					
Other: _____					

33. What % of your transit system auto/bus incidents are deemed Preventable and Non-Preventable?
(use National Safety Council definition)

Preventable
Non-Preventable

	1991	1992	1993	1994	1995 (p)
Preventable					
Non-Preventable					

Please answer Q36 - Q55 with specific regard to AUTO / BUS VEHICLE LIABILITY claims.

34. Who is responsible for claims administration for your transit system? Include insurance agents and brokers, third-party administrators and contractors, and employees who are responsible for performing and/or coordinating inside or outside claims adjusting. _____

35. Please diagram the standard or normal procedure within your transit system for processing auto/bus vehicle liability claims. Show accident investigation, claims evaluation, litigation and clerical functions. Indicate files maintained throughout the claims resolution process by M for manual or E for electronic files such as data base & spreadsheets, or other specially designed software. Please attach any standard forms which are routinely used, such as manual claim forms. Use a separate sheet for the diagram if necessary.

Claims process:

36. Does the transit system own, use or have ready access to a service which has an electronic risk management information system (RMIS)? YES NO

If yes, is RMIS integrated (linked) with the transit system general ledger? YES NO

37. Are loss runs circulated throughout responsible divisions within the transit system? YES NO

If YES,

Who generates them? _____

Who receives them? _____

How often? _____

Please attach a sample loss run.

38. In your state: _____, how quickly must a claim be filed subsequent to an occurrence? _____

39. Once a claim is filed,

Are claimants always interviewed? YES NO

Do claimants complete a written questionnaire? YES NO

40. Please provide the following information for auto/bus liability claims. For purposes of this chart, please combine claims for personal injury and for property damage. Please total the columns, and calculate a four-year average for each field.

Fiscal Year	# New Claims	Amount Claimed \$	Avg Claim Amount \$	# at >= \$25K	Amount Paid \$	% Paid <i>u</i>	Reserve Funded \$	Reserve Applied <i>(b)</i> \$
1991								
1992								
1993								
1994								
Total 4 yrs								
Avg 4 yrs								

u Indicate whether amounts paid relate to year of payment (cash-flow) _____ or claim year (actuarial) _____.

Please answer Q36 - Q55 with specific regard to AUTO / BUS VEHICLE LIABILITY claims.

41. How are loss adjustments, including plaintiff and third-party collections, applied to Amounts Claimed?

42. How are Reserves applied to Amounts Paid?

43. Are Reserve balances reconciled to claims at month-end? Y N At year-end? Y N

44. For # new claims shown in column 1 of Q40, please indicate claims disposition as follows:

Fiscal Year	(Q 40) # New Claims	Claims Closed		For Claims Closed			
		#	%	Claims Tried \1	Claims Settled \2	#	%
1991							
1992							
1993							
1994							
Total 4 yrs							
Avg 4 yrs							

\1 Include action by arbitration, mediation and administrative tribunal.

\2 Include meritless suits which are dismissed by the transit system or judicial authority.

45. For # new claims shown in column 1 of Q40, please indicate % frequency as follows:

	1991	1992	1993	1994 (p)
. % blind claims \1				
. % ADA claims \2				
. % meritless suits \3				

\1 Claims for which the transit system has no prior notice or knowledge.

\2 Claims for alleged violation of the Americans with Disabilities Act of 1990.

\3 Include fraudulent liability claims.

46. What is the average time it takes for your transit system to settle auto/bus claims? months

47. What is the transit system's oldest outstanding claim for auto/bus liability at this time?

Claim: _____

Claimant: _____

Amount: \$ _____

Age: _____ months

Why hasn't settlement occurred? Mention procedural obstacle(s) and basis for legal dispute.

Please answer Q36 - Q55 with specific regard to AUTO / BUS VEHICLE LIABILITY claims.

48. For Section 15 Federal reporting purposes, object class 506 Casualty & Liability expense, does the transit system value incurred losses by policy year, allocating payments to the year each claim was filed (actuarial method); or are payments applied to the year in which the payout was made (cash flow method)?

ACTUARIAL METHOD _____

CASH FLOW METHOD _____

49. Who within the transit system has input into and authority for the settlement and appeals process?

Please diagram settlement responsibility in an organizational flow chart. Mention all units and individuals with direct input to the settlement process including decisions involving structured settlements (annuities) and other innovative payment methods.

Settlement process:

50. Are win reports, judgement memoranda and other formal dispositional claims notices issued within the transit system? Who gets them?

51. Are insurance premium rebates and policy renewals monitored in relation to claims & settlement trends? Who does this? How often are trends examined?

52. Is community sentiment and political activity monitored outside the transit system, in relation to system claims and settlement trends? Who monitors the community?

53. Does your transit system direct, operate or use a collection and subrogation program to obtain payment from negligent parties for injury to transit employees or others, or for damages to transit property? Which department is responsible for this function?

TORT LAW

54. To what extent does your state have sovereign immunity? Please give statutory limits as applicable.

55. Are there any other state tort claims act provisions which directly impact your transit system?

56. Are there currently any state legislative initiatives in the broad area of tort reform which will impact your transit system?

LOSS CONTROL

57. Who develops and implements Safety & Loss Control programs at your transit system?

58. Please VERY BRIEFLY describe the loss control program which is currently in use at the transit system. Use the guide below to identify each program element.

Hiring policy	_____
Drug screen	_____
Training	_____
Re-training	_____
Ride checks	_____
Safety committee(s)	_____
Disciplinary code	_____
Awards	_____
Incentives	_____
Posters, brochure	_____
Newsletter(s)	_____
Written manuals	_____
Media use	_____
Surveys	_____
Classes	_____
Passenger advisories (signs & audio msgs)	_____
Other:	_____

Do not attach loss control material.

End of questionnaire.

Thank you!

APPENDIX C
SUMMARY OF QUESTIONNAIRE RESPONSES



Summary of Questionnaire Responses

	A1	A2	A3	B1	B2	B3
# Buses	1,300	600	500	200	200	30
Fleet Age	9	8	8	5	10	7
Size	BA Flxible	BA Flxible	BA Orion V's	BA Orion V's	BA Flxible	BB Gillig
ADA	60% lift	81% lift	67% lift	86% lift	78% lift	19% lift
Insurance	SI to \$5M, excess \$95M	SI to OR max of \$500K per accident; excess to \$5M for WA operations	SI to UT max of \$500K per accident; no excess	SI to \$1M, excess to \$20M	SI, no excess	Commercial to \$5M, no excess
Area (sq mi)	1,486	592	1,642	295	1,058	72
Population	3,005,757	988,284	1,072,227	931,146	834,054	80,846
Service Miles (M)	73.8	23.4	17	9.7	7.6	1
Service Hours(M)	4.8	1.8	.93	.64	.47	.071
# Staff	8,200	2,000	1,200	750	440	70
Payroll (\$M)	\$510	\$90	\$28	\$39	\$15	\$1
Operating Expense (\$M)	\$290	\$108	\$46	\$37	\$24	\$2.4
Total Agency Revenue(\$M)	\$331	\$145	\$57	\$54	\$29	\$2.4
OE/VRM	\$7.91	\$4.61	\$2.98	\$5.53	\$2.94	\$2.43
OE/PM	\$0.64	\$0.51	\$0.42	\$0.61	\$0.48	\$0.48
UT/VRM	3.93	2.37	1.56	2.36	1.30	1.93
1) Fare-Box Revenue (\$M)						
FY 91	\$87	\$26	\$8	\$12	\$4	\$7
FY 92	\$90	\$26	\$8	\$13	\$4	\$8
FY 93	\$89	\$27	\$9	\$13	\$4	\$7
FY 94	\$86	\$28	\$9	\$15	\$5	\$7
2) RM Function	Administration Dept	Finance Director	Finance Director	Finance Director	Human Resources	Risk Mgmt Dept
3) Ridership - (M)						
1991	245		25	15	7	1
1992	239	50	27	15	8	1
1993	238	50	25	15	9	1
1994	238	51	24	16	10	1
1995	242	53	25	15	9	1
4) Payroll - (\$M)						
1991	\$457	\$68	\$23	\$35	\$13	\$1
1992	\$485	\$75	\$26	\$39	\$14	\$1
1993	\$485	\$83	\$26	\$37	\$14	\$1
1994	\$510	\$93	\$26	\$39	\$15	\$1
1995	\$513	\$98	\$30	\$39	\$16	\$1
5) Service %						
Fixed route	99	87	91	100	69	94
Demand Response	1	13	9	0	31	6
6) Vehicles %						
Motor Bus	98	87	80	100	90	86
Trolley Bus					10	4
Vanpool			11			
Paratransit	2	13	9			10
7) Tax Revenue	None	63% local payroll tax; 4% self employment tax; 2% state payroll tax	1/4% sales tax in areas served by transit authority	\$1/6 cent Measure A sales tax; \$1/4 cent TDA-LTF	\$0.50 per \$1,000 ad valorem on taxable property	None

Summary of Questionnaire Responses

		A1	A2	A3	B1	B2	B3
8)	FY	ends 6/30	ends 6/30	ends 12/31	ends 6/30	ends 9/30	ends 6/30
9)	Cost of Risk	\$21,913,146	\$2,593,896	\$2,217,412	\$1,712,704	\$1,088,944	\$169,453
10)	C&L Exp						
	1991	\$1,392,883	\$1,412,043	\$601,593	\$968,968	\$984,800	\$153,764
	1992	\$5,122,254	\$1,350,613	\$776,577	\$1,603,112	\$1,053,486	\$162,279
	1993	\$8,173,938	\$1,417,879	\$884,015	\$3,380,676	\$1,054,898	\$169,165
	(p) 1994	\$8,570,663	\$1,935,967	\$870,621	\$1,496,933	\$1,088,944	\$157,453
11)	Is reserve funded?	Yes	No	Yes	Yes	Yes	Yes
12)	Fatalities since 1991	14	5	3	1	3	0
13)	Primary collision type	Rear end	Side swipe	Rear end	Side swipe	Rear end	Side Swipe
14)	Primary cause of Incident(s)	Not recorded	Weather		Operator Error	Operator Error	Operator Error
15)	Percent preventable accidents - 1994	29%	38%	33%	92%	25%	19%
16)	How many in S/RM dept?	42	9	5	7	5	2
17)	Loss runs circulated?	No	Yes	No	No	Yes	Yes
18)	Statute of limitations	3 years	180 days/2 years	1 year/1 year	6 months/6months	4 years	3 years
19)	Number of new claims						
	1991	2,947	3,113	209	245	185	77
	1992	2,639	3,073	228	241	230	55
	1993	2,524	3,203	263	323	187	68
	1994	2,820	3,630	182	290	96	57
20)	Number at >= \$25K						
	1991	26	10	3	7	1	2
	1992	34	7	2	6	1	2
	1993	27	14	2	5	1	2
	1994	31	10	2	9	1	2
21)	Amount Paid	Cash Flow	Actuarial	Actuarial	Actuarial	Cash Flow	Actuarial
	1991	\$3,737,488	\$1,365,175	\$558,599	\$1,039,597	\$603,032	\$90,358
	1992	\$3,235,535	\$963,996	\$480,848	\$735,218	\$285,490	\$20,955
	1993	\$1,889,269	\$1,440,768	\$563,781	\$666,904	\$497,903	\$27,913
	1994	\$1,499,540	\$1,293,191	\$154,140	\$1,218,024	\$298,781	\$36,795
22)	Claims closed						
	1991	2,918	3,111		243	182	
	1992	2,569	3,073		238	229	
	1993	2,384	3,192		303	163	
	1994	2,582	3,599		252	62	
23)	Oldest claim (months)	12	78	42	57	74	36
24)	Dispositional notices circulated?	No	Yes	Yes	No	No	Yes

APPENDIX D

CASUALTY & LIABILITY REPORT FOR LARGE SYSTEM (EXAMPLE)



Casualty & Liability Report for Large System

PHYS DAMAGE INS - REV CO 5061010	37041 0	09/30/95
CURRENT BAL	33,517.74	
JUNE 30 1995	133,330.54	
JUNE 30 1994	173,463.39	
JUNE 30 1993	161,827.62	
JUNE 30 1992	104,094.88	
JUNE 30 1991	45,716	
5061040	120441 0	
CURRENT BAL	130,660.40	
JUNE 30 1995	446,270.92	
JUNE 30 1994	351,716.15	
JUNE 30 1993	303,601.47	
JUNE 30 1992	331,827.96	
	.71,336	
PHYS DAMAGE INS - D.G. CFO 5061020	37042 0	09/30/95
CURRENT BAL	18,062.70	
JUNE 30 1995	71,757.42	
JUNE 30 1994	44,994.71	
JUNE 30 1993	68,494.35	
JUNE 30 1992	58,234.49	
JUNE 30 1991	56,204	
CONTRACTOR INS. COVERAGE 5061030	47160 0	00/00/00
CURRENT BAL	.00	
JUNE 30 1995	.00	
JUNE 30 1994	.00	
JUNE 30 1993	.00	
JUNE 30 1992	.00	
RAILROAD PROTECTIVE INS. 5063020	37160 0	09/30/95
CURRCNT BAL	11,345.08	
JUNE 30 1995	47,473.64	
JUNE 30 1994	45,281.50	
JUNE 30 1993	46,902.45	
JUNE 30 1992	46,476.00	
JUNE 30 1991	47,255	
DE/PO EXPENSE 5065010	41160 0	09/30/95
CURRENT BAL	227,137.61	
JUNE 30 1995	7,545,512.57	
JUNE 30 1994	1,463,335.91	
JUNE 30 1993	1,160,023.33	
JUNE 30 1992	1,046,861.25	
JUNE 30 1991	1,411,838	
5065010	91160 0	09/30/95
CURRFNT BAL	14,400.10	
JUNF 30 1995	72,782.10	
JUNF 30 1994	223,087.35	
JUNE 30 1993	7,670.03-	
JUNE 30 1992	63,385.63	
JUNE 30 1991	447,711 7	
PREMIUM FOR OTHER INS 5066010	37160 0	10/31/95
CURRENT BAL	8,746.38	
JUNE 30 1995	17,578.96	
JUNE 30 1994	15,293.40	
JUNE 30 1993	32,236.50	
JUNE 30 1992	30,723.00	
JUNE 30 1991	72,572	
CLAIMS SETTLEMENTS-UNINS. 5069010	37160 0	07/31/95
CURRENT BAL	.00	
JUNE 30 1995	6,784.95	
JUNE 30 1994	11.25	
JUNF 30 1993	1,065.00	
JUNF 30 1992	837.09	
JULC 30 1991	5,773	

FY15 2,893,220.18
 FY14 1,935,967.51
 FY93 1,417,879.27
 FY12 1,950,613.34
 FY91 1,412,043 includes DR 7/31

Section 15 totals
 line 506



APPENDIX E

CASUALTY & LIABILITY REPORT FOR SMALL SYSTEM (EXAMPLE)



FUND 001 GENERAL FUND		ACCOUNT		DESCRIPTION		*****CURRENT*****		*****YEAR-TO-DATE*****		*****PERSONNEL/RISK MANAGEMENT*****	
BA	ELF	OBJ	BA	ELF	OBJ	BUDGET	ACTUAL	%EXP	BUDGET	ACTUAL	%EXP
850	853	40	40	22	MATERIALS AND SUPPLIES	0	686	642	0	0	0
		40	25	25	PRINTING MATERIALS	0	0	0	5179	64	0
		40	34	34	OFFICE SUPPLIES	0	0	0	0	0	0
		40	**#	**#	TRAINING AIDS	0	642	94	0	0	0
		40	**#	**#	MATERIALS AND SUPPLIES	686	0	8100	5179	64	0
<u>60 CASUALTY & LIABILITY</u>											
60	01	01	01	01	CLAIM PAYOUT FY 91	0	0	0	8616.75	0	0
60	02	02	02	02	CLAIM PAYOUT FY 92	0	0	0	9200.00	0	0
60	03	03	03	03	CLAIM PAYOUT FY 90	0	0	0	2500.00	0	0
60	04	04	04	04	CLAIM PAYOUT FY 89	0	0	0	6410.30	0	0
60	05	05	05	05	CLAIM PAYOUT - PRIOR 88	0	0	0	0	0	0
60	06	06	06	06	CLAIM PAYOUT - FY 96	0	0	0	0	0	0
60	07	07	07	07	CLAIM PAYOUT - FY 95	0	0	0	131437.38	0	0
60	08	08	08	08	CLAIM PAYOUT FY 93	0	0	0	56175.32	0	0
60	09	09	09	09	CLAIM PAYOUT FY 94	0	0	0	992298.81	0	0
60	10	10	10	10	ATTORNEY FEES FY 94	0	0	0	116250.78	0	0
60	11	11	11	11	ATTORNEY FEES - FY 95	0	0	0	27477.22	0	0
60	12	12	12	12	ATTORNEY FEES - FY 96	0	0	0	0	0	0
60	13	13	13	13	ATTORNEY FEES - PRIOR 88	0	0	0	0	0	0
60	14	14	14	14	ATTORNEY FEES FY 88	0	0	0	0	0	0
60	15	15	15	15	ATTORNEY FEES FY 89	0	0	0	581.00	0	0
60	16	16	16	16	ATTORNEY FEES FY 90	0	0	0	793.53	0	0
60	17	17	17	17	ATTORNEY FEES FY 91	0	0	0	10915.06	0	0
60	18	18	18	18	ATTORNEY FEES FY 92	0	0	0	11852.90	0	0
60	19	19	19	19	ATTORNEY FEES FY 93	0	0	0	51069.68	0	0
60	20	20	20	20	CLAIM RESERVE FY 91	0	0	0	29807.72	0	0
60	21	21	21	21	CLAIM RESERVE FY 90	0	0	0	58528.64	0	0
60	22	22	22	22	CLAIM RESERVE FY 89	0	0	0	0	0	0
60	23	23	23	23	CLAIM RESERVE FY 88	0	0	0	0	0	0
60	24	24	24	24	CLAIM RESERVE FY 87	0	0	0	0	0	0
60	25	25	25	25	CLAIM RESERVE FY 86	0	0	0	0	0	0
60	26	26	26	26	CLAIM RESERVE FY 85	0	0	0	0	0	0
60	27	27	27	27	CLAIM RESERVE - PRIOR 84	0	0	0	0	0	0
60	28	28	28	28	CLAIM RESERVE FY 92	0	0	0	51008.15	0	0
60	29	29	29	29	CLAIM RESERVE FY 93	0	0	0	185244.22	0	0
60	30	30	30	30	CLAIM RESERVE FY 94	0	0	0	318106.26	0	0
60	31	31	31	31	CLAIM RESERVE FY 95	0	0	0	423331.94	28	0
60	32	32	32	32	CLAIM RESERVE FY 96	0	0	0	0	0	0
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60	117	117	117	117	0	0	0	0	0	0	
60	118	118	118	118	0	0	0	0	0	0	
60	119	119	119	119	0	0	0	0	0	0	
60	120	120	120	120	0	0	0	0	0	0	
60	121	121	121	121	0	0	0	0	0	0	
60	122	122	122	122	0	0	0	0	0	0	
60	123	123	123	123	0	0	0	0	0	0	
60	124	124	124	124	0	0	0	0	0	0	
60	125	125	125	125	0	0	0	0	0	0	
60	126	126	126	126	0	0	0	0	0	0	
60	127	127	127	127	0	0	0	0	0	0	
60	128	128	128	128	0	0	0	0	0	0	
60	129	129	129	129	0	0	0	0</td			



APPENDIX F
ACCIDENT REPORT (EXAMPLE)



**SUPERVISOR'S FIELD NOTES
AND ACCIDENT / INCIDENT REPORT**

For Legal Department

REPORT NUMBER

DATE OF
ACCIDENT/
INCIDENT

DAY OF
WEEK

S M T W T F S

MILITARY
TIME

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

BLOCK #

OPERATOR'S NAME

#

VEHICLE: MAKE _____
NUMBER _____

CENTRAL

NUMBER OF
COURTESY CARDS
1 2

ROUTE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

ADDRESS OF ACCIDENT (Number / Street) _____ City _____

PERSONS INJURED

NAME OR DESCRIPTION	ADDRESS: CITY, STATE, ZIP	PHONE	AGE	SEX	NATURE OF INJURIES
UTA VEHICLE:					
1.					
2.					
3.					

OTHER VEHICLE—PEDESTRIAN—BICYCLIST

1.					
2.					
3.					

OTHER VEHICLE

YEAR	MAKE	LICENSE#	STATE	INSURANCE COMPANY	AGENT	POLICY NUMBER
OWNER						
DRIVER						
DRIVERS License	STATE	NUMBER				

PASSENGER ACCIDENT REPORT

PHYSICAL APPEARANCE OF PASSENGER: APPARENTLY NORMAL ILL INTOXICATED DISABLED
 PASSENGER WAS: US BOARDING SITTING ALIGHTING STANDING RUNNING TO CATCH BUS
 INJURY OR DAMAGE TO PASSENGER _____
 INJURED SENT TO: HOSPITAL OTHER _____
 ACTION OF BUS DRIVER IN HANDLING PASSENGER(S) _____

WERE ANY STATEMENTS MADE BY PASSENGER(S) OR BYSTANDER(S) AS TO WHY THIS OCCURRED? YES NO
 DESCRIBE: _____

WEATHER CONDITIONS	STREET CONDITION	LIGHT CONDITIONS	TYPE OF ACCIDENT	DRIVERS CONDITION	TRAFFIC	WAS BRAKE INSPECTION ORDERED?
<input type="checkbox"/> CLEAR	<input type="checkbox"/> WET	<input type="checkbox"/> SUNNY	<input type="checkbox"/> NON-INJURY	<input type="checkbox"/> COMPOSED	<input type="checkbox"/> NONE	<input type="checkbox"/> YES <input type="checkbox"/> NO
<input type="checkbox"/> SNOWY	<input type="checkbox"/> DRY	<input type="checkbox"/> OVERCAST	<input type="checkbox"/> POSS-INJURY	<input type="checkbox"/> UPSET	<input type="checkbox"/> LIGHT	DID OPERATOR CLAIM BRAKES OR EQUIPMENT
<input type="checkbox"/> RAIN	<input type="checkbox"/> ICY-SNOW	<input type="checkbox"/> DAWN	<input type="checkbox"/> INJURY	<input type="checkbox"/> INJURED	<input type="checkbox"/> MEDIUM	FAILURE A FACTOR?
<input type="checkbox"/> FOG	<input type="checkbox"/> DISREPAIR	<input type="checkbox"/> DUSK	<input type="checkbox"/> FATALITY	<input type="checkbox"/> DRUG TEST ORDERED	<input type="checkbox"/> HEAVY	<input type="checkbox"/> YES <input type="checkbox"/> NO
<input type="checkbox"/> OTHER	<input type="checkbox"/> OTHER	<input type="checkbox"/> DARK				

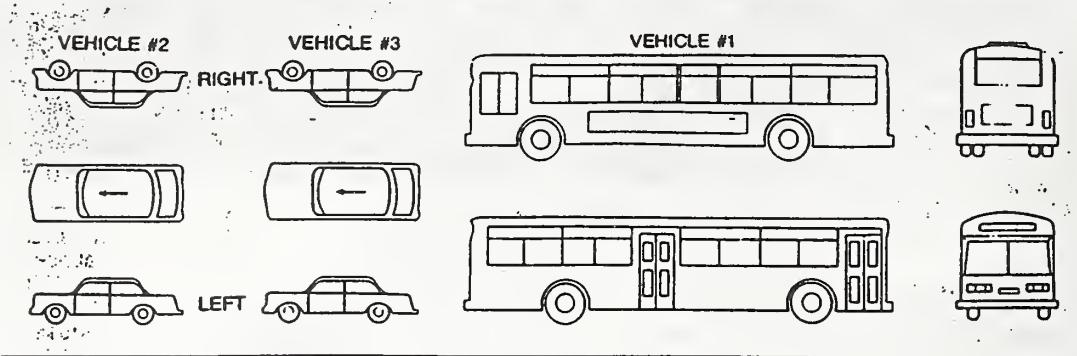
IF A COLLISION WITH PROPERTY / OBJECT

DESCRIBE OBJECT _____

EXTENT OF DAMAGE TO OBJECT _____

LOCATION OF OBJECT _____

NAME OF OWNER _____ ADDRESS _____ PHONE 591-1428



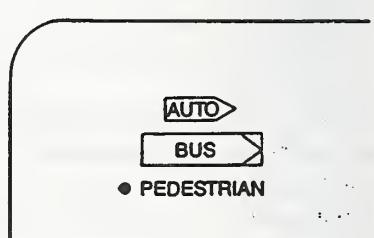
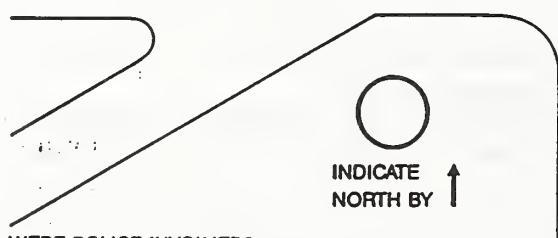
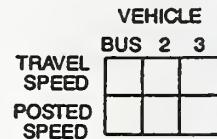
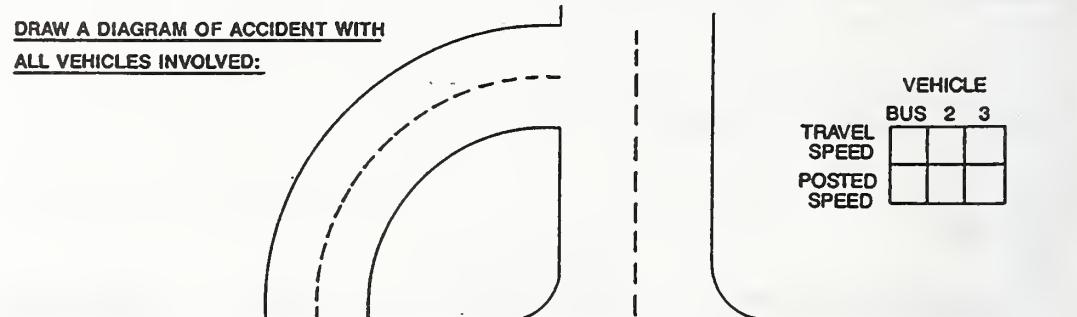
EST. OF DAMAGE \$ _____ EST. OF BUS DAMAGE \$ _____

EST. OF BUS DAMAGE \$ _____

DAMAGE ESTIMATE SUBMITTED YES NO

UTA VEHICLE OTHER VEHICLES(S) BOTH NONE

**DRAW A DIAGRAM OF ACCIDENT WITH
ALL VEHICLES INVOLVED:**



WERE POLICE INVOLVED?

YES NO

CASE NO. _____ OFFICER'S NAME _____ CITY / COUNTY _____

WAS CITATION ISSUED? YES NO TO WHOM _____ VIOLATION _____

IN YOUR OWN WORDS, EXPLAIN WHAT YOU OBSERVED AND WHAT HAPPENED:

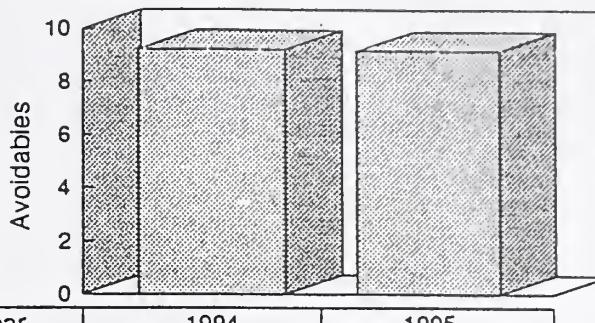
SIGNATURE _____ **DATE OF REPORT** _____

APPENDIX G
RISK MANAGEMENT REPORT (EXAMPLE)



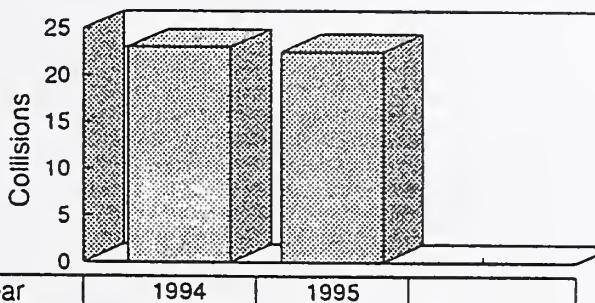
Avoidables Per Million Miles

May 1994 and 1995

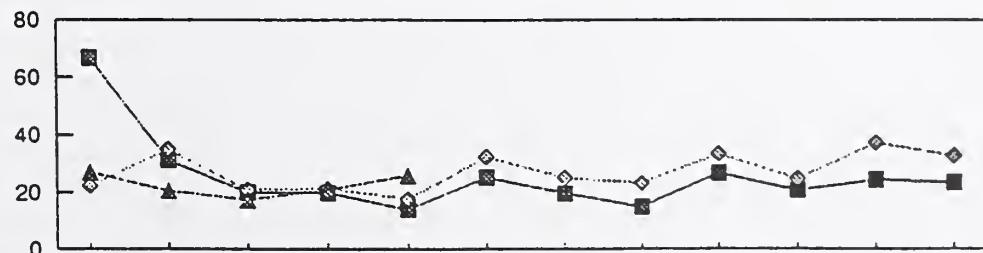


Accidents Per Million Miles

May 1994 and 1995 YTD



Collisions Per Million Miles



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
■ 1993	66.85	31.2	20.08	19.84	13.84	25.22	19.58	14.85	26.87	20.69	24.37	23.48
◇ 1994	22.28	34.9	20.94	21.28	17.49	32.22	25.01	23.28	33.44	24.83	37.05	32.79
▲ 1995	27.05	20.54	17.29	21.04	26							



APPENDIX H
SAMPLE POLICIES



EXCESS LIABILITY

Policy Term:	July 1, 1994 - July 1, 1995
Company:	Insurance Company of the West
Policy No.:	
Coverages:	Excess Public Entity Liability including General Liability, Public Entity Errors & Omissions, Automobile Liability (Owned, Non-Owned and Hired) and Uninsured & Underinsured Motorist (UM/UIM) on an occurrence basis. Form No. (EPEDWL)
Bus Lines:	\$ 1,000,000 Excess of \$1,000,000 Self Insured Retention (SIR) (General Liability, Errors & Omissions)
Bus Lines:	\$ 1,000,000 Excess of \$1,000,000 Self Insured Retention (SIR) (Auto Liability/Uninsured Motorists/Underinsured Motorists)
Light Rail:	\$ 1,000,000 Excess of \$5,000,000 Self Insured Retention (SIR) (General Liability/Errors & Omissions)
Light Rail:	\$ 1,000,000 Excess of \$5,000,000 Self Insured Retention (SIR) (Auto Liability/Uninsured Motorists/Underinsured Motorists)
	\$ 1,000,000 Errors & Omissions Aggregate
Terms and Conditions:	Exclusions: Pollution, Asbestos, ERISA, Punitive Damage, Discrimination, Wrongful Termination and Class Action Suit for Discrimination or Wrongful Termination. Same Terms and Conditions and other Exclusions as per expiring.
Total Premium:	\$ 192,556

B001963.8
03/01/95

SCHEDULE OF EARNED PREMIUMS FOR

POLICY	PREMIUM	EFFECTIVE DATE	EXPIRATION DATE
AUTO/GENERAL LIABILITY	\$166,116	07/01/92	07/01/93
AUTO/GENERAL LIABILITY	\$157,134	07/01/93	07/01/94
AUTO/GENERAL LIABILITY	\$168,710	07/01/94	07/01/95
AUTO/GENERAL LIABILITY	\$142,345*	07/01/95	07/01/96
BOILER & MACHINERY	\$ 735	07/01/91	07/01/92
BOILER & MACHINERY	\$ 770	07/01/92	07/01/93
BOILER & MACHINERY	\$ 770	07/01/93	07/01/94
BOILER & MACHINERY	\$ 770	07/01/94	07/01/95
BOILER & MACHINERY	\$ 789*	07/01/95	07/01/96
CRIME	\$ 1,654	07/01/91	07/01/92
CRIME	\$ 1,654	07/01/92	07/01/93
CRIME	\$ 1,559	07/01/93	07/01/94
CRIME	\$ 1,559	07/01/94	07/01/95
CRIME	\$ 1,559*	07/01/95	07/01/96
PROPERTY/INLAND MARINE	\$ 4,655	01/01/92	01/01/93
PROPERTY/INLAND MARINE	\$ 2,785	01/01/93	07/01/93
PROPERTY/INLAND MARINE	\$ 5,154	07/01/93	07/01/94
PROPERTY/INLAND MARINE	\$ 5,159	07/01/94	07/01/95
PROPERTY/INLAND MARINE	\$ 5,175*	07/01/95	07/01/96

*QUOTED PREMIUM. SUBJECT TO CHANGE BY ENDORSEMENT(S) DURING THE POLICY TERM.

07/06/95





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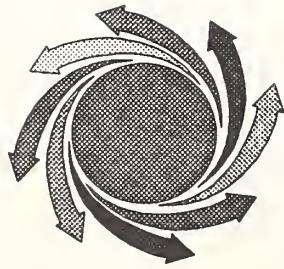
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